Queen's University

PRINCIPAL'S REPORT

13th May, 1938.

To the Board of Trustees,
Queen's University.

Ladies and Gentlemen:

I have the honour to present the report for the year 1937-38.

The following is the list of resignations, reappointments and new appointments to the Trustee Board during the past year.

Two trustees resigned on account of ill-health—Mr. G. F. Henderson of Ottawa and Mr. William Curle of Montreal.

At the meeting of the Board of Trustees last May Mr. R. M. Smith, Deputy Minister of Highways for Ontario, was elected to the Board for four years in place of Mr. Curle. At the same meeting the following members were re-elected: Dr. J. G. Dwyer and Mr. D. I. McLeod for four years and Mr. Fraser D. Reid, representing the Faculty of Applied Science, for three years.

The graduates re-elected Dr. O. D. Skelton and Mr. V. K. Greer for three years and the benefactors re-elected Mr. J. M. Macdonnell for four years, and Mr. J. M. Campbell, representing the Faculty of Applied Science, for three years. They also elected Mr. Duncan K. MacTavish for one year to complete the term of Mr. G. F. Henderson.

The University Council re-elected Mr. G. C. Bateman and Dr. T. H. Farrell to be their representatives on the Board for three years from April 1st, 1938.

Dr. G. A. Brown, representing the Theological College, was re-appointed for one year and at its May meeting the Trustee Board appointed him a member of the Executive Committee. Mr. J. C. Macfarlane was also appointed a member of the Executive Committee in place of Mr. D. I. McLeod.

The Staff.

In the year under review the University suffered loss by death of two very valued members of the teaching staff, Professor George J. MacKay after several months of illness, and Professor W. C. Baker with startling suddenness. George MacKay was loved by all with whom he came in contact. He exercised an influence over his students in metallurgy which will remain with them all their lives. His interest in them was real and personal. It had to do with their work, in which his demands were high; but it had to do with their problems of living as well. He was their counsellor and friend. W. C. Baker spent his life with and for Queen's. Forthright, unsparing in his criticism of the things that did not make for righteousness, rigid in his demands from students, he won and kept their high regard because of his sincerity and enthusiasm for his work. Of wide interests and culture, his influence was felt far beyond his own chosen field of physics, in which as student and teacher he was associated with his university for forty years.

From the list of staff changes which is appended to this section of the report it will be noted that many new members have joined the staff during the year. They have been appointed, in the main, to junior positions in the departments. Some senior positions had to be filled. The vacancy in the Chair in Metallurgy, caused by the death of Professor MacKay, will be filled in September, 1938, by the appointment of Mr. T. V. Lord of the Consolidated Mining and Smelting Company of Canada, who has had wide experience in metallurgical practice with that company since he graduated from Queen's in 1922. As head of the Extension work, including extramural courses, Mr. R. M. Winter took up his duties last September, after an experience in business, in teaching, and in extension activities. Mr. J. C. Cameron was selected to take charge of the work in Industrial Relations, for which his academic and business experience had provided the right background. Dr. C. F. Blackler, who had been appointed Medical Health Officer for the City of Kingston, was appointed as well to the staff of the department of Public Health in the University, and serves in this way as a valuable link between the administrative and the academic phases of public health.

Three members of the staff were on sabbatical leave. Dr. Gregory Vlastos has been working in the field of philosophy at the University of London; Mr. W. E. C. Harrison on history at the University of Oxford; and Dr. Heinrich Henel on philology in Germany and in England. Dr. Henel has been on leave since January 1st, 1938, Dr. Vlastos and Mr. Harrison since October 1st, 1937. According to the terms of sabbatical leave, the work in the department concerned has been carried on without additional cost to the University. It is of great advantage that members of staff may in this way have the opportunity to give themselves uninterruptedly for a year to productive scholarship in the fields of their choosing.

The special abilities of members of the faculties have been recognized during the year. It is a pleasure to record the honours which have come to them, and the services which they have been able to render outside the classroom and the laboratory.

Dr. N. E. Berry was elected President of the Kingston and Frontenac Medical Society. Two of Mr. André Biéler's pictures were chosen for the exhibition of Canadian paintings at the Coronation and at the Paris 1937 Exposition Internationale. Professor E. L. Bruce was elected corresponding

Fellow of the Edinburgh Geological Society, and represented the Canadian Government at the International Geological Congress in Russia. Professor G. H. Clarke received the Seranus Memorial Prize for 1937 for his poem *Hymn to the Spirit Eternal.* Dr. W. Ford Connell was elected a Fellow of the Royal College of Physicians and Surgeons of Canada. Professor J. A. Corry has given service to the Royal Commission on Dominion-Provincial Relationships on constitutional problems. Dr. A. A. Day received the degree of Doctor of Philosophy from the University of London. Professor R. O. Earl served on the committee on Science in the revision of the High School curriculum for Ontario. Dean F. Etherington was elected President of the Medical Council of Canada and also a member of the Council of the Royal College of Physicians and Surgeons of Canada. Dr. G. H. Ettinger has been appointed a member of the Associate Committee of the National Research Council on Medical Research. He has also been appointed a member of the Advisory Board of the Banting Foundation. Dr. S. M. Gilmour received the degree of Doctor of Philosophy from the University of Chicago. Dr. T. A. Goudge received the degree of Doctor of Philosophy from the University of Toronto. Dr. F. L. Harrison won the Schumann Trophy for original composition in the Quebec Musical Festival competition in Montreal. Dr. Martin A. Henry has received the degree of Doctor of Philosophy from Harvard University. Dr. W. A. Jones was elected to the Council of the Royal College of Physicians and Surgeons of Canada. Professor F. A. Knox is giving assistance on trade balance problems to the Royal Commission on Federal-Provincial Relationships. Professor Mary L. Macdonnell was elected President of the Kingston Business and Professional Women's Club. Professor W. A. Mackintosh is directing the economic studies for the Royal Commission on Federal-Provincial Relationships. Professor W. L. Malcolm has received the degree of Doctor of Philosophy from Cornell University. Professor Norman Miller served on the committee on Mathematics in the revision of the High School curriculum for Ontario. Dr. G. B. Reed has been appointed a member of the Fisheries Research Board of Canada. He has also been appointed Associate Editor of the Journal of Bacteriology. Professor J. K. Robertson served on the committee on Science in the revision of the High School curriculum for Ontario. Professor J. M. Shaw received the degree of Doctor of Divinity, honoris causa, from the University of Edinburgh. Dr. L. S. Stavrianos received the degree of Doctor of Philosophy from Clark University. Professor M. Tirol served on the committee on Modern Languages in the revision of the High School curriculum for Ontario. Professor H. L. Tracy has been appointed to the Rhodes Scholarship Selection Committee for Ontario and was elected Chairman of the Kingston Municipal Board of Education and President of the Kingston Music Club. Professor R. G. Trotter was Chairman of the session on "Repercussions of the United States Constitution in the Britsh Empre" at the meeting of the American Historical Association in Philadelphia. He was also chairman of the committee on arrangements for the Canadian-American Conference at Queen's University.

The following is the list of changes in personnel and in rank which have taken place during the year:

Resignations

Hon. Norman Rogers, on his election to Parliament in 1935, was given leave of absence. He was elected Rector of the University in March, 1937, and has resigned his position on the staff.

Hendry C. Connell, after two years' leave of absence, has now resigned his position as a member of staff.

S. C. Morgan resigned his position in the department of Electrical Engineering to go to the University of British Columbia.

Other resignations were: Eric Duthie, Lecturer in the department of English; R. W. Stevens, Lecturer in Draughting; and E. H. Charlesworth, Instructor in Chemistry.

Promotions

F. A. Knox from Associate Professor to Professor, department of Economics.

C. A. Curtis from Associate Professor to Professor, department of Economics.

G. H. Ettinger from Associate Professor to Professor, department of Physiology.

L. A. Munro from Assistant Professor to Associate Professor, department of Chemistry.

John Stanley from Assistant Professor to Associate Professor, department of Biology.

W. Ford Connel from Assistant Professor to Associate Professor, department of Medicine.

Eldon Boyd from Lecturer to Assistant Professor, department of Pharmacology.

R. A. Low from Lecturer to Assistant Professor, department of Civil Engineering.

On leave without salary

C. W. Bennett, department of Medicine, on account of illness.

A. W. Currie, department of Commerce, to study at Harvard University.

J. F. Sparks, department of Surgery, for the first term, on account of illness.

Sabbatical leave to be granted for 1938-39

Henry Alexander, department of English, to study dialect changes in England and on this continent.

G. Spencer Melvin, department of Physiology, to work on electrophysiology in University College, London.

Hugh Walpole, department of French, to work with C. K. Ogden on the science of linguistic methods.

New Appointments

In the Faculties of Arts and Applied Science:

T. V. Lord, B.Sc. (Queen's)—Professor of Metallurgy from Sept. 1st, 1938.

J. C. Cameron, M.Com. (Queen's)—Head of the Industrial Relations Section, School of Commerce for five years.

Ross M. Winter, M.A. (Queen's)—Director, department of Extension.

William Angus, B.S. (Bowdoin), Ph.D. (Cornell)—Lecturer in English and Public Speaking.

Newton W. Buerger, S.M., Ph.D. (M.I.T.)—Lecturer in the departments of Geology and Mineralogy.

H. G. Conn, B.Sc. (Queen's)—Lecturer in the department of Mechanical Engineering.

C. L. Emery, B.Sc. (Queen's)—Lecturer in the department of Mining and Metallurgy for the session 1937-38.

T. A. Goudge, M.A. (Dalhousie), Ph.D. (Toronto)—Instructor in the department of Philosophy in the absence of Professor Vlastos.

H. W. Harkness, B.Sc. (Queen's), M.Sc., Ph.D. (McGill)—temporary Lecturer in the department of Physics.

Martin A. Henry, M.A. (Colorado), Ph.D. (Harvard)—Lecturer in the department of German for the second term in the absence of Professor Henel.

J. A. Martin, B.A. (Hons.) (Queen's)—Instructor in the department of Chemistry.

H. S. Pollock, M.Sc. (Queen's)—Lecturer in the department of Electrical Engineering.

L. S. Stavrianos, B.A. (British Columbia), A.M., Ph.D. (Clark)—Instructor in the department of History for the session 1937-38 in the absence of Professor Harrison.

Martin S. Stevens, B.Sc. (Queen's)—Assistant in the department of Mining and Metallurgy for the 2nd term.

J. D. Stewart, M.A. (Queen's)—Lecturer in the department of Mathematics for the session 1937-38.

H. J. Styles, B.Sc. (Queen's)—Lecturer in Draughting.

In the Faculty of Medicine:

C. F. Blackler, M.B., C.M., D.P.H. (McGill)—Assistant Professor in the department of Public Health.

J. C. Samis, M.D., C.M. (Queen's), F.R.C.S.(E.)—Demonstrator in Anatomy and Clinical Assistant in the department of Medicine for the session 1937-38 in the absence of Dr. Bennett.

Physical Training:

A. T. Bradshaw, Director of Physical Education at the Y.M.C.A., has taken the classes in physical training for the session on account of Mr. Bews' illness.

Student Registration.

In the report of the Registrar, the detailed statement is given of the registration for the year, and the comparative statement for the year 1936-37. There is an increase, from last year, of approximately 100 students in attendance for degree courses during the winter session. The registration is larger in Arts and in Applied Science. With the limitation in numbers now in effect in Applied Science and in Medicine, the number of students in these faculties will remain stationary, at somewhat less than the numbers now registered in these faculties. There will probably be some increase in the number of students in the Faculty of Arts. In all, the registration figure of 1796, representing the total number of students enrolled for the winter session 1937-38 in degree courses in all the faculties will probably not be exceeded in the next few years.

The extramural registration, which reached a high peak of 1630 in 1936-37, fell to 1468 during the present year. The special requirement of the department of Education of the Province of Ontario necessitated the registration in Arts courses of teachers who wished to raise their standing to the required level. The peak has now passed, and the extramural registration and the attendance at Summer School during last summer may be taken as of normal dimensions. While other universities have developed their own successful Summer Schools, Queen's University has a special relationship to teachers because of the extramural contact. It may be expected that this will be maintained at the present level.

The courses for Bankers and Chartered Accountants, carried on under the School of Commerce, continues to fill a real need. Warm tributes are paid by the professions con-concerned to the work which Queen's is doing in these fields. The total registration for the courses—949—is practically the same as that for last year.

A group of students, not registered as Queen's students, is nevertheless very closely identified with the University and its work. This is the Department of Education group, numbering 440, to which the hospitality of Queen's was given during the summer session of 1937, as in previous years. It is of great value to the University, and to the Summer School students, to have on the campus during the summer this group of teachers who are here to raise their professional standing by the study of educational theory and method. Every contact which the University maintains with those who are active in the teaching profession is of assistance in developing a unity of outlook on the whole problem of education.

Student Life and Thought.

The best indication of the quality of a university, in its influence on the student, is to be found in the manner of the student living and thinking. What is the quality of the student paper? How much real thinking is going on in the student organisations? Have there been lively issues—on an intellectual plane—on the campus? Has the student administration been capable and wise? What is the tone of the athletic and the social life? These are pertinent questions; and a university is judged by the manner of the answers almost as much as by the scholarship displayed in the classroom. There are some observations that should be made in this sense with reference to the year now closing.

There has been a distinct quickening of interest in the discussion of matters of importance. This has been shown in the pages of the Journal and in the commission groups which were formed to prepare for, and to follow up, the Winnipeg Conference. The conference, at which there was a good representation of Queen's students, was probably of greater value in throwing together students of different points of view in Canadian problems than in anything else. Students, like other people, tend to become parochial in their outlook. Their own university is best; their way of doing things is the right way. It is salutary to discover that other students are doing things in other ways, and are thinking in other directions. From the discussions at Winnipeg a stimulus has been felt at Queen's. It is not to be expected that students can exert great influence in the affairs of the country. It is well that they should concern themselves with them: and that in the direction of student matters they should act with an understanding of conditions as they exist elsewhere.

In the student functions there has been careful supervision, under student direction. The arrangements for the Rectorial visit were excellent; and the more important social events were well conducted. It has been found to be a great gain to hold all functions at the University, where control can be exercised by the students themselves. They have done so in a very satisfactory way.

In two respects, however, the student dances are a concern of the Social Functions Committee. The formals have become too elaborate, and consequently too expensive, for the ordinary student. They miss their purpose if they become exclusive. And the year dances have too many guests who are not students. In university halls the social functions should be almost exclusively for the students, if they are to be managed successfully by students. Both matters are receiving the attention of the Social Functions Committee and the necessary machinery will be devised to meet the situation.

The Alma Mater Society Executive for 1936-37 decided that all initiation ceremonies for new students should be abolished. This ruling was not sustained at a mass meeting of the student body last autumn, but the decision was reached that any arrangements which should be recommended from the student representatives of the Faculties should come before the Executive of the Alma Mater Society for consideration before approval. It is a second best decision. The Executive of the Alma Mater Society is a body of mature judgment and wisdom in student affairs. If the Executive exercise the authority with which it is charged, any immature and impulsive wishes of junior students which may not accord with the dignity and good name of the University will not go into effect. This is a matter with which the Senate in its responsibility must continuously keep in contact, in order that no procedure which is unwise may be adopted. Objectionable and childish initiation ceremonies are obsolete in the best universities; and Queen's must in this as in other matters rank itself with the best. It can take no other course.

In the field of athletics Queen's has played a prominent part during the year. This is not the place to recount the various activities in the many games in which Queen's students participate. Both men and women have done their part. The University takes pride in the fact that a Queen's student was the outstanding javelin thrower at the Empire games in Australia. It is good also to see Queen's admitted into the water polo series. It is no reflection on the other sports, however, to state that the outstanding feature was the winning of the football championship, not so much because of the victory but because of the spirit of tenacity and pluck which carried a team almost from cellar position at the earlier stages of the series to the top at the end. Queen's adopted the cry "Never say die" many years ago. It is that spirit, more than the winning, to which I wish to pay tribute here.

The Sunday Services.

When students undertake a responsibility, they can usually be relied on to carry it through. A year ago it seemed advisable, on the judgment of the Executive of the Alma Mater Society, to establish Sunday services in Grant Hall once a month, and to make the necessary arrangements through a Sunday Service Commission, on which students and staff were represented. It was decided as well that the services should be conducted by representative students, and that prominent men from the various religious faiths should be invited to speak. Six services have been held during the academic year. They have been conducted by Theological students; men and women students have read the lessons; and the speaker has been introduced by the President of the Alma Mater Society or by his representative. The services have been very well attended by students of Queen's, and have filled what seemed to have been a need in the religious life of the student body. Whether or not this or that student may attend regularly the services of their own church, they find themselves at home from time to time in a service which is particularly their own. This is the atmosphere which the students' services in Grant Hall has provided once a month during last term.

The Glee Club furnished a choir, and the New Hammond organ, so generously provided by Mrs. D. W. Boucher, a graduate of Queen's, made possible a musical setting which gave dignity and an atmosphere of worship to the services. The Public Address system, installed through the good offices of the Alumni Association, made hearing easy in all parts of Grant Hall. The services were broadcast over Queen's Radio station, and were listened to by many who were not able to attend the services.

The following were the speakers during the winter, and the subjects with which they dealt:

Oct. 17th—Rabbi Maurice N. Eisendrath of Holy Blossom Synagogue, Toronto, "Where Jew and Christian meet."

Nov. 14th—Rev. G. A. Sisco, D.D., Secretary of the General Council of the United Church of Canada, Toronto: "Religion in a changing world."

Dec. 5th—Rev. D. A. Maclennan, B.A., B.D., of Timothy Eaton Memorial Church, Toronto, "Gentlemen, the King."

Jan. 23rd—Rev. Gerald B. Phelan, Ph.D., of St. Michael's College, Toronto, "The University is the guardian of traditional culture and development."

Feb. 13th—Rev. Stuart C. Parker, M.A., D.D., of St. Andrew's Church, Toronto, "I am not ashamed of the gospel of Christ."

March 6th—Rt. Rev. Philip Carrington, Bishop of Quebec, "Civilization and Religion."

Scholarship Awards.

It is the responsibility, and at the same time a source of pride, for a university to provide the stimulus to some of its ablest students to enable them to compete successfully for those higher awards which will give them an opportunity to qualify for still higher educational advantages. These awards are made not only on the evidence of special ability in a limited range of studies. That evidence there must be: but education is more than knowledge and skill in special fields. It is important as well that interests have been widened and enthusiasms quickened. A Scholarship Selection Committee looks for the signs of a liberal education. A university has been remiss if the opportunity has not been afforded to all its students, but to its ablest students in particular, to follow their own interests far beyond the requirements of the classroom. The library, the discussion club, the talks between teacher and student, the whole atmosphere—these should be of such a kind as to provoke to a liberal education.

During the last year important awards have come to students of Queen's University. The list is of such a kind as to give some measure of assurance that sound educational values are emphasized in the work at Queen's.

One of the two Rhodes Scholarships for Ontario was awarded to Malcolm Brown, a final year student in Medicine, and President of the Aesculapian Society. One of the three Royal Exhibition of 1851 Scholarships for Canada was awarded to Arthur G. Ward, a graduate student in Physics. The I.O.D.E. Overseas Scholarship for Ontario was given to Thomas J. Allen, who a year ago received the degree of Master of Arts in English. The French Government Scholarship for Ontario was awarded to Miss Barbara Craig who graduated in 1937 with first class honours in French. The following students received scholarships from other universities, and institutions, in order to continue their graduate studies at these universities:

Herbert H. J. Nesbitt, B.A.—Research Assistantship in Biology—University of Toronto.
Edmund G. Berry, M.A.—Classical Fellowship—University of Chicago.
E. A. S. Galbraith, B.A.—Teaching Fellowship—Cornell University.
Charles E. Lingren, M.A., Leonard McFadden, M.A.—Fellowships—Brown University.
Mackenzie L. Keith, M.Sc.—Fellowship—Massachusetts Institute of Technology.

National Research Council

Wendal A. Alexander, M.A., Morris Lieff, M.A.—Studentships in Chemistry.
Arthur G. Ward, M.A.—Studentship in Physics.
Ronald P. Graham, B.A.—Bursary in Chemistry.
Robert H. Hay, B.Sc., Leon Katz, M.Sc.—Busaries in Physics.
Norman H. C. Fraser, B.A.—Bursary in Geology.

The following students were successful in winning major awards at the disposal of Queen's University:

Winifred E. Rutledge, M.A.—Marty Memorial Scholarship.
George R. Tottenham, B.A.—French Exchange Scholarship.
George B. Macgillivray, B.A.—German Exchange Scholarship.
M. Phyllis Nunn, B.A.—R. B. Bennett Scholarship for Summer Session at Geneva School of International Studies.
Anne H. Sedgewick, B.A.—Special Scholarship for Summer Session at Geneva School of International Studies.

The Research Spirit.

One of the most significant things in the newer happenings at Queen's has been the organisation of the Baconian Society, representative of all the men and women on the staff and in the graduate group who are interested in research in the pure and applied sciences, including medicine. The Baconian Society has met fortnightly during the winter, for the discussion of special problems of research in which members of the staff are engaged. To all members it is a stimulus; but to the younger men at the beginning of their experience in the research method, it has proved to be particularly valuable. The free and easy, informal nature of the meetings is well suited to the production of that exchange of opinions which is of particular value to workers in the widely varied fields of research activity in which members of a university staff find themselves occupied.

The Science Research Committee has for several years assisted the Trustees by apportioning funds to men in the pure and applied sciences, including medicine, mainly by providing student assistance and apparatus for research work during the summer months. In the humanities the work is necessarily of a different nature. In order to discuss ways and means of assisting members of the staff in their productive scholarship in the non-scientific fields, a committee of the Faculty of Arts has been established, which may make it possible, by small grants from the Trustees, to assist in publication and otherwise, and to give support and encouragement to productive scholarship in the humanities and the social sciences.

It is necessary to find the ways and means to augment the funds which are now available for research at Queen's. The possibility of assistance from one of the foundations to develop a major project of research in preclinical and clinical medical science is now under exploration. An associate committee on medical research is being set up under the National Research Council which may be in a position to assist future researches of a worthwhile kind in the clinical or preclinical subjects of medicine. Several of the more important pieces of work in Queen's have been helped in whole or in part from outside sources. That kind of support will be necessary to even greater degree in the future. The Craine building, now completed and adequately equipped, is an addition of great value to the research facilities of Queen's University. As soon as it was completed, it immediately provided the facilities for Dr. Harold Longenecker, a holder of a National Research Council (Washington) Fellowship, to continue his researches under Dr. Sinclair. Dr. Longenecker had already worked, after receiving the Fellowship, in the laboratories in Liverpool and in Germany.

By the spirit of research a university lives. Without it, it dies. Young men appointed to the staff should not only be good teachers. It is important as well that they are so seized with the enthusiasm for exploration in their own field that no difficulties will daunt them; and that they find the way to give of their time to scholarship and research, and in so doing stimulate all with whom they come in contact.

Extension Services.

Much progress has been made, during the past year, in extending the contacts of Queen's University to those who are interested in following their own intellectual pursuits. Under the direction of Mr. R. M. Winter, who was appointed last autumn to the position of Director of Extension, this has been done in two ways, both of which deserve comment.

Queen's extramural students, most of whom are teachers, have found themselves somewhat isolated from direct contact with the staff of the University, and with the help which comes from personal discussion. It is, of course, impossible to arrange that lectures and seminars be held in all centres in Canada where Queen's extramural students live. But it is possible by cooperative arrangements and at little cost to the University, at places where fifteen or twenty students can gather together, to arrange for a short course, conducted either by members of the staff of Queen's University, or by competent local instructors who are familiar with the courses at Queen's. Arrangements on this basis have been made at Belleville, Peterborough, Ottawa, Kingston, Port Arthur and Fort William. The indications have been that the students have been greatly helped by the assistance which the arrangements have made possible.

The other service which the University has been able to give is more directly in the work of adult education. There are groups in all cities and towns who meet together to study and discuss subjects in which they are interested. In the main, they carry on with their own intellectual resources, pooling their knowledge and their points of view. But from time to time they need expert assistance, such as members of the staff of a university are competent to give in their own chosen fields. The groups are in a position to finance the cost involved; and, within wise limits, time given to such work by members of staff who may be invited to do so is in the best interests of the University and of education. The group method, in which discussion plays a prominent part, is more effective and productive of more lasting intellectual interest, than is the speaker and audience method which too frequently is ephemeral in its results. Assistance has been given, during the session, to groups in Napanee, Belleville, Cobourg, Gananoque, Brockville and Peterborough.

The University is a natural centre for lectures which should be of interest, not only to students, but to residents of Kingston who may have an interest in the subjects which are under discussion. The January and February Monday afternoon lectures on Five Political Creeds—Fascism, Communism, Socialism, Conservatism and Liberalism—attracted very considerable interest. They are being published by the Ryerson Press. Follow-up discussions, again led by members of the staff, took place on the Wednesday evenings of the weeks on which the lectures were delivered. Members of the staff of the department of Physics gave a series of popular experimental lectures which were well attended. The evening talks over Queen's radio station were continued and have become an outstanding part of the Extension programme of Queen's University. New features were introduced on the radio, including a morning devotional period led by ministers of the churches in the city. On two occasions the students supplied a variety radio half hour, musical and dramatic, in order to try out available talent for a C.B.C. hour from Queen's next autumn.

The application to increase the power, and change the wavelength, of the Queen's station has been before the Canadian Broadcasting Corporation for the past year. There are technical difficulties, connected with international agreements, which take time to clear up. There is a fair prospect that permission may be granted. A wider coverage—up to one hundred miles radius—would greatly enlarge the opportunities of the University in the service which it can render to those who cannot enrol as students of Queen's.

Special Functions and Special Lecturers.

At the Spring Convocation ceremony the honorary degree of Doctor of Laws was conferred on Walter Allward, designer of the Vimy Ridge Memorial, William Thomas MacClement, Emeritus Professor of Biology, Queen's University, and President Sidney Earle Smith of the University of Manitoba. The degree of Doctor of Divinity was conferred on Rev. Bert Howard, Principal of Albert College, Belleville, and Rev. Gordon Alfred Sisco, Secretary of the United Church of Canada. President Smith spoke on behalf of the honorary graduates.

At the Medical Convocation the address to the graduating students was delivered by the Hon. L. J. Simpson, Minister of Education for Ontario.

At a Special Convocation, held when the Canadian-American Conference was in session at Queen's, the degree of Doctor of Laws was conferred on five distinguished American citizens: Newton Diehl Baker, Secretary of War in President Wilson's administration; Isaiah Bowman, President of Johns Hopkins University; James Brown Scott, Secretary and Trustee of the Carnegie Endowment for International Peace; Laurens Hickok Seelye, President of The St. Lawrence University; and James Thomson Shotwell, Director of the Division of Economics and History, Carnegie Endowment for International Peace. Mr. Baker responded for the recipients of degrees.

At the Autumn Convocation the honorary degree of Doctor of Laws was conferred on Sir Edward Beatty, Chancellor of McGill University, and former Chancellor of Queen's University. Sir Edward was the special speaker on this occasion. He chose as his subject the theme, *Freedom and the Universities.*

At the Autumn Reunion Mr. J. M. Macdonnell, Chairman of the Board of Trustees, addressed the Alumni on the subject, *Why are University Graduates so ineffective in politics?*

At the Armistice Service in Grant Hall, conducted by Principal Kent, Vice-Principal W. E. McNeill gave the address.

The Rectorial address was delivered in Grant Hall by the Hon. Norman Rogers, Rector of Queen's University and Minister of Labour for Canada. Mr. Rogers spoke on *Industrial Peace.* The arrangements were in the hands of the Alma Mater Society and were dignified and effective.

The University had as a special visitor President H. N. MacCracken of Vassar College who spoke in Grant Hall on *Recent Trends in Education in the United States.*

The following ladies and gentlemen visited Queen's during the year and spoke to the student body, or to a club or organisation connected with the University: Mr. U. S. Annett, Sir Frederick Banting, Mr. Percy Bartlett, Dr. W. E. Blatz, Mr. Harrison Brown, Mr. J. W. Buckley, Dr. Martin Buerger, Mr. J. L. Busfield, Mr. R. L. Calder, Dr. Robert Chambers, Dr. R. B. Cochrane, Dr. C. T. Currelly, Mr. A. L. Davies, Mr. J. A. Dickinson, Dr. C. W. Drury, Mr. M. F. Fairlie, Capt. H. Free, Dr. W. E. Gallie, Mr. D. G. Geiger, Mr. C. G. Gibson, Mr. Donald Gordon, Dr. S. C. Hollister, Miss Ruth Home, Mr. J. C. Honey, Dr. W. R. Horne, Dr. G. S. Hume, Dr. A. W. Jolliffe, Miss Margaret Kinney, Dr. T. Z. Koo, Mr. H. W. Little, Mr. Gordon McGregor, Mr. Graham C. McInnis, Mr. K. A. MacKinnon, Miss Mary McMahon, Mr. A. R. Mosher, Dr. John R. Mott, Dr. MacKenzie-Naughton, Prof. L. Joslyn Rogers, Dr. T. C. Routley, Miss Lorna Runbal, Prof. Edward Sampson, Mr. L. G. Smith, Mr. R. J. C. Stead, Dr. H.

S. Taylor, Miss Rose Terlin, Mr. Charles Troutman, Flight-Lieut. Wait, Dr. M. E. Wilson and Mr. Steacy Woods.

It has meant much to Queen's University that so many distinguished men and women have been guests of the institution, and have given of their experience and knowledge so generously to their student audiences.

Educational Conferences.

During the summer of 1937 three conferences were held at Queen's University. These were the Canadian-American Conference, the Canadian Universities Conference, and the Industrial Personnel Conference.

At the Canadian-American conference a very representative group of men and women dealt with the problems which affect the two countries in finance, in labour organization, in literary and artistic outlook, in foreign policy, and in public opinion. The conference, the second of its kind, was made possible through the generosity of the Carnegie Endowment for International Peace and the vision and enthusiasm of Dr. Shotwell. A completely frank approach to the problems at issue was characteristic of the discussions throughout the week of meetings.

The Canadian Universities conference dealt with problems in higher education in Canada. The Arts Course, Honours Standards, conditions of Matriculation, and the distribution of the academic work among the universities were subjects to which the members gave their attention.

The function of the Workers' Educational Association, and the plans for enlarging its scope, were outlined to the conference. The work of the Educational Branch of the Bureau of Statistics was explained and opportunities for wider cooperation with the universities were suggested.

The guest to the conference from the National Association of State Universities, President H. G. James of the University of Ohio, gave an illuminating review of the educational situation in the United States, more particularly in the relationship of secondary school to university.

The Industrial Personnel conference was the second of its kind to be held in succession at Queen's. The University has become the headquarters in Canada for the discussion of the problems of industrial management in the field of labour, more particularly because of the establishment of the Industrial Relations Section at Queen's University. As these conferences continue from year to year, it is noticeable that the discussions become franker and more fundamental. The problems are difficult and this method of approach seems eminently sound.

Conferences such as Queen's had the honour to entertain last summer quicken the thinking, enlarge the sympathies, and broaden the understanding of national and international issues. They have been stimulating to our whole university life.

International Relations Work.

The work of Industrial Relations was established in Queen's in October, 1937, as a division of the School of Commerce. Mr. J. C. Cameron, a graduate in Commerce of this University, who had had experience in labour relations work with Canada Packers, was appointed to take charge of the undertaking. Secretarial and research assistants have also been appointed. The work is financed on a five year basis, and funds are being provided by sixteen Canadian industrial organizations to whose executives the value of this work has appealed. The work has been initiated under conditions of goodwill, both from labour and industry, which are favourable to solid accomplishment.

The division is in the process of assembling accurate data on the relationships which have been established between management and working forces in the Canadian industrial field. As there is considerable variety in the contracts and agreements, it is necessary for this division of work at

Queen's to make personal contact with industries and labour organizations in Canada. This is being done. With completely up-to-date data, the division will serve as a clearing house on methods and procedures in industrial life, and to that extent will be helpful through the dissemination of pertinent and accurate information. The background of fact is necessary as well as a basis on which research may be carried out on problems which need investigation. For instance, the pension plans in industry, although in some instances generous in their terms, are greatly lacking in uniformity, and are exclusively related to the particular industrial organizations by which they were established. The whole problem of industrial pensions is receiving study in the Industrial Relations division at Queen's.

It is of particular value to the final year men in Applied Science and in Commerce to obtain an insight, as they now do, through a short lecture course given by Mr. Cameron, into the main problems in labour-management relations as they exist today. These young men and women will soon face these issues. They will do so with more sympathy and understanding because of the work which is going on in the Industrial Relations division at Queen's.

Gifts and Benefactions.

The following is a list of gifts and benefactions received by the University during this year.

The Government grant remains the same as last year at $275,000.

The Public Health grant is $5,000, the same as last year.

The Leonard Estate has added a further amount of approximately $36,500 for the distribution of assets. This sum has been added to the Endowment.

By the will of the late Isabella McIntyre, a sister of the late D. M. McIntyre, the University received $10,000. This sum has been added to the Endowment.

The Carnegie Corporation has notified the University of a final grant of $5,000 to support the work in Music, half in February, 1938, and the other half in February, 1939.

In memory of her mother, the late Mrs. I. G. Bogart, Mrs. Boucher has placed in Grant Hall a Northern Hammond electric organ, costing about $3,400.

A public address system has been installed in Grant Hall by the General Alumni Association, a Chancellor's chair by the Class of Arts '41, and a Rector's chair by the Class of Arts '38.

Mrs. Frederick Etherington, who is financing the work in Fine Art under Mr. Biéler, has offered to increase the amount by $1,000.

Mrs. Etherington has completed the re-decorating and furnishing of the Music Room, which was formally opened at the time of the Autumn Convocation, and has recently supplied a Steinway grand piano for this room.

Mr. and Mrs. T. A. McGinnis have each contributed $1,000 towards the new Sanitary Engineering Laboratory.

Mr. W. W. King has contributed $1,000 to the same Laboratory.

Mrs. Florence M. Goodwill, in addition to establishing the Victor Lyall Goodwill Prize last year, has contributed $2,500 to found the Victor Lyall Goodwill Memorial Scholarship in Internal Medicine in memory of her husband.

Mr. I. Cohen has added $750 towards his two scholarships.

The Chancellor contributed $500 towards the Bell maps purchased by the Library.

Mrs. Mackintosh Bell has given the University 200 copies of the first edition of her late husband's book, *Far Places,* the proceeds from their sale to be used for the free radium treatment of cancer.

Mrs. Alice Turton of Montreal has presented to the University two pictures, one of Wagner and one of Liszt.

Dr. Dwyer has sent his personal cheque of $150 to cover three years' arrears of the New York Alumni Scholarship.

The Ford Motor Company of Canada gave a V-8 motor to the department of Mechanical Engineering.

Dr. George Hayunga presented Colours from the John Hayunga Post, American Legion, to the Queen's University Contingent, C.O.T.C.

The Function of Queen's University in Education.

Several matters of detail have been summarized in the preceding paragraphs and will be found as well at greater length in the reports of the administrative officers which make up the body of this report. It is well to look at our problems from time to time in greater perspective, in order that the planning in detail should be in conformity to the larger conceptions of the place of this University in the work and responsibilities of higher education. This is all the more necessary for the reason that much time has been given during the year to the discussion of the needs of Queen's University and the ways in which generous graduates and friends might assist the University in meeting the demands which it will face as it looks forward beyond the end of its first hundred years of service. The Trustees at their meeting in May of this year will give judgment on the nature of the programme to which the University should look forward, and the way in which the financial assistance which this programme might require should be canvassed.

Queen's stands in a position between a State university and a privately endowed institution. It receives financial assistance, and it draws support from its endowments. On the one hand it should give reasonable opportunity to those students who are concerned about their proficiency for their life vocation; and for this purpose the courses in Applied

Science, Medicine and Commerce provide the means. On the other hand Queen's should be greatly concerned about the values in education which are more directly related to the living of a life than the making of a living. This is the dual demand which rests on this University by virtue of its financial background and its past history.

Specialization is the order of the day. Students come to the universities in order to become proficient in a subject, or a limited group of subjects, in which their interests lie and to which their lifework will be directly related. The ideal of a liberal education, as it was understood a generation ago, has fewer and fewer disciples. The demand for efficiency has been reflected in the narrowing of the curriculum, even in an undergraduate course in Arts. Serious thinkers are concerned about this tendency. While admitting the value of specialized ability, particularly in a country such as ours, they feel that, if this tendency is permitted to continue in full stream, the loss will be greater than the gain. Even as it is, scientists, mathematicians, philologists, economists, engineers are being educated with little contact with the great fields of thought outside their own subjects; and the results are disquieting.

The most effective safeguard against a narrow outlook in the field of education is a strong and stimulating Arts Faculty, whose function it should be to enliven and enrich the whole range of student thought. It would be mistaken policy if at Queen's University the time should come when the Faculty of Arts should take second place to any professional school, no matter how important. The Faculty of Arts has had under careful consideration the question of widening the scope of the honours courses, in order that freedom of choice may be given to students through a general honours course, to take wider elections than are permitted in some of the departmental prescriptions. In any such question, even in an Arts Faculty, the rival claims of professional efficiency and breadth of culture are maintained with vigour. But Queen's University should not exclude the possibility of our abler students obtaining a wider contact than the intensive study of two subjects in his undergraduate years may afford. Graduate work for the Master's degree provides the necessary degree of specialization for such a student at a time when intensive application to a single subject is in order.

In the professional schools the demands in knowledge and technique are so great that the time is fully occupied in mastering the scientific and technical backgrounds of the professions. Some students take an Arts course, in whole or in part, before entering on the course in Medicine or Applied Science. Because of the output of money and of time which is involved in this procedure, the students who can do so are few; but they profit greatly thereby. Queen's is fortunate in the close relationship which exists in the student body between the faculties. There are values which are transferred from professional men to Arts men, and from Arts men to professional men in their discussions and in their interests. The University has been fortunate as well in the fact that several men in the professional teaching staffs are of wide culture and humane interests. Though they teach in a specialized field, they are able to link up the subject with literature and with life. That is the kind of approach which makes a permanent impression on the mind of the student. In the hands of a humanist any subject may provide the way to a liberal education.

A student body limited in numbers and selected for quality; a staff able, enthusiastic, liberally educated; a desire to do a few things very well rather than to do many things less well; an unwavering determination to give that kind of education which will develop in her students not only accurate knowledge and skill in special fields, but as well the poise, the judgment, the philosophic outlook which are the hallmarks of a liberal education—these should be the aims of Queen's University. In all her planning for the days to come, in her looking forward to the celebrating of her Centenary and to the years beyond, these should be her underlying aspirations.

In endeavouring to attain these high ideals, Queen's will remain true to her traditions and will make the contribution to Canadian education which she can give more fittingly than anything else that she may have to offer.

Respectfully submitted,

ROBT. C. WALLACE,

Principal and Vice-Chancellor.

REPORT OF THE FACULTY OF ARTS

I have the honour to present herewith the report of the Faculty of Arts.

Registration.

Winter Session	1936–37	1937–38
Intramural students		
First year, men	146	189
women	125	109
Previously registered, men	365	357
women	211	235
Total	847	890
Extramural students, men	737	719
women	893	749
Total	1630	1468
Summer Session	1936	1937
Students at Summer School, men	379	295
women	371	215
Total	750	510
Students extramural only, men	233	277
women	275	313
Total	508	590

The number of intramural students this year was greater by 43 than a year ago; but it was less by 70 than the number in 1931-32. The increase was mainly in the number of men, especially first year men. This has the appearance of a return to normal, as the decrease in numbers during the depression was mainly among the men. The decrease this year in the number of first year women had hardly been expected, but it was offset by the increase in the number of those previously registered.

The increase in extramural and Summer School registrations in the past two years was a result of regulations issued by the Ontario Department of Education requiring certain university work for Teachers' First Class Certificates. These regulations have recently been modified. Of the five university subjects originally required for a First Class Certificate, four have now been made optional with certain summer courses offered by the Department itself. The course in English is the only one remaining as a definite requirement. This change will doubtless cause a reduction in the number of extramural and Summer School registrations in the immediate future.

Changes in Staff.

German. Professor Henel was granted leave of absence for the second term of the session just closed. His class work has been taken by Martin A. Henry who was appointed lecturer for the term from January until April inclusive. Mr. Henry has the degree of M.A. from the University of Colorado, and the degree of Ph.D. from Harvard.

English. Last summer Mr. E. E. Duthie who had been lecturer in English for a number of years resigned his position. Mr. William Angus, Ph.D. (Cornell) was appointed lecturer, with the understanding that he should at first fill the position vacated by Mr. Duthie, and then gradually take over duties as instructor in public speaking. His appointment is for the usual probationary period of two years.

History. Professor Harrison was given leave of absence for the session 1937-38, and his work was taken over for the session by Mr. L. S. Stavrianos, B.A. (British Columbia), A.M., Ph.D. (Clark University).

Dr. G. S. Graham, who was appointed lecturer in History for 1936-37, was reappointed for the usual probationary term of two years.

Philosophy. Professor Vlastos was granted leave of absence for the session 1937-38, and his work was taken over by Mr. T. A. Goudge, M.A. (Dalhousie), Ph.D. (Toronto), who had already held a Fellowship in Philosophy at Queen's.

Mr. H. M. Estall, who was a lecturer in Philosophy for 1936-37, was reappointed for the session 1937-38. He supplied as a lecturer in 1933-34 during the absence of Professor Humphrey on leave, and was lecturer in McMaster University in 1934-35 and 1935-36. He expects to receive his doctorate this summer from Cornell.

Mathematics. Mr. J. D. Stewart, M.A. (Queen's), was appointed lecturer in Mathematics for 1937-38 in the place of H. J. Styles who occupied the position in 1936-37. Mr. Stewart had a session's experience in the same position some years ago, but he has since then studied at Princeton and in Germany.

New Studies.

In the report of the Faculty of Arts a year ago, it was stated that a course in Art had been added to the optional subjects for the B.A. degree; and it was hoped that a similar annnouncement might soon be made for a course in Music. This hope is already realized. A year ago the Faculty agreed to accept as an option the subject of Music on the same terms as that of Art, and the two courses were offered during the past session. They are important additions to the cultural values available in the B.A. course.

An important step was also taken last summer in the direction of Public Speaking. The appointment of Dr. Angus in the Department of English was made with Public Speaking particularly in mind. It is hoped that shortly his time will be given mainly to this subject.

Desirable Extensions.

The most pressing need now among the various departments is a proper laboratory for Psychology, in charge of a trained laboratory instructor. The students in Psychology now get an excellent course, in as far as they can get it through class instruction and the small illustrative laboratory now in use. But the course needs to be rounded out to include laboratory training as it is understood today.

Another desirable extension to the work of the Faculty lies in the direction of courses in the philosophy of Education. This is not immediately pressing; but it would fill a distinct need in an institution like Queen's which sends out so many of its graduates into the teaching profession.

The General Honours Course.

A few years ago the Faculty made a thorough revision of the courses for the degree of B.A. with Honours. The main feature of the revised courses was a high specialization in a major subject, with a lesser specialization in a minor subject. There has, however, been a growing feeling for some time that the high specialization in the major is not in the best interests of every Honours student. There are many students for whom courses of equal weight but with less specialization in one subject would be of far more value. This is the case, for example, with those who are going to be teachers in the primary or secondary schools, or who come to the university for a good cultural education with no thought of proceeding to graduate work. The Faculty therefore adopted this spring a new course, known as the General Honours Course, the main feature of which is that the specialization is distributed equally over three subjects. From now on a student desiring an Honours degree will have the option of specializing unequally in two subjects as formerly, or equally in three subjects as now provided.

Research in the Humanities.

For twenty years there has existed a committee appointed by the Board of Trustees to encourage research in the experimental sciences and to advise as to the financial or other needs of such research. The work of this committee has proved of excellent value. Some months ago the Faculty of Arts considered the analogous problem of research in the humanities and appointed a committee to encourage such research among the members of the staff and to advise as to its needs. The committee has already made a preliminary survey of the problem, and has mapped out tentative methods of procedure. Final policy can be determined only after some experience. There is reason to believe that the committee will find itself in a position to perform a useful function.

Graduate Scholarships and Fellowships.

The graduating class of each year includes in its membership students whose class and examination records throughout their course are judged to be excellent. Some of the better ones among these, but not all, are recognized by being granted Fellowships or Scholarships by the University. The following awards were made a year ago, as indicated. The first two are not controlled by the University.

A Rhodes Scholarship—J. Gordon Davoud, B.A., Kingston, Ontario.

The Marty Memorial Scholarship—Winnifred E. Rutledge, M.A., Kingston, Ontario.

Arts Research Travelling Fellowship, $500—E. G. Berry, M.A., Martintown, Ontario.

Arts Research Resident Fellowship, $500—Jeanne S. Le Caine, B.A., Port Arthur, Ontario.

Reuben Wells Leonard Resident Research Fellowships, each $500—Kenneth Carr, B.A., Toronto, Ontario; Isabel B. Hope, B.A., Ottawa, Ontario; Helena Riedel, B.A., Kingston, Ontario.

The Sir James Aikins Fellowship in Canadian History, $400—Gladys Heintz, B.A., Navan, Ontario.

The Western Ontario Graduates' Fellowship in History, $320, and the Right Honourable R. B. Bennett Scholarship for Summer Session at the Geneva School of International Studies—Phyllis Nunn, B.A., Hamilton, Ontario.

Special additional Scholarship for the Geneva School—Anne Sedgwick, B.A., Ottawa, Ontario.

French Exchange Scholarship—G. R. Tottenham, B.A., Kingston, Ontario.

German Exchange Scholarship—G. B. Macgillivray, B.A., Port Arthur, Ontario.

A number of other excellent graduates received Scholarships or Fellowships at American Graduate Schools where they are now in attendance.

The session has been a normal one, marked in the main by a wholesome academic atmosphere. A spirit of cooperation made it pleasant for all concerned. Only in one particular might one be inclined to become critical, namely in the fact that the academic flavor is not as strong in the fall term as it ought to be. There is no good reason why a proper academic atmosphere should not exist at the beginning of the session. The problem is however not primarily a Faculty one, but one which should enlist the best efforts of the University as a whole.

I should like to express again my constant appreciation of the kindness and cooperation of the officers of the University and of the teaching and office staffs. I should make particular reference in this connection to the Registrar and the Dean of Women whose duties are closely associated with my own.

J. MATHESON,
Dean of the Faculty of Arts.

REPORT OF THE SCHOOL OF COMMERCE AND ADMINISTRATION

The registration in intramural courses in Commerce and Administration for the session 1937-38 is 159, in which are included 70 first registrations and about 40 applicants for the degree of Bachelor of Commerce. This is considerably higher than the registration of the previous year. A gratifying number of these students come from provinces other than Ontario, some being graduates in Arts of other universities and others having taken part of their work elsewhere.

In spite of the threatened business recession opportunities for employment have been fully equal to those of last year, and no difficulty is being experienced by the class of 1938 in obtaining employment. An increasing number of companies are sending representatives to Kingston to interview the graduating class, and several are willing to employ more graduates than are available for them.

Industrial Relations Section.

During the year, through the generosity of a number of Canadian corporations and through their serious interest in the problems of industrial relations, financial provision was made for the establishment of an Industrial Relations Section in the School. In October Mr. J. C. Cameron, M.Com., a graduate of Queen's who had been for some time economist to Canada Packers, Limited, was appointed head of the new Section and began work immediately. With the help of Miss Idele Wilson, M.A., as research librarian, and Miss Jane McKee, B.A. as research secretary, a great deal has been accomplished during the winter in assembling information concerning the industrial relations policies and practices of Canadian business and in correlating the various legislative enactments in this field. Mr. Cameron has spent a good deal of time in visiting personally a large number of employers and acquainting himself at first hand with their problems and policies. It is expected that the Section will issue shortly its first research bulletin on Industrial Pensions.

In September, 1937, a second Industrial Relations Conference was held at the University and over a hundred representatives of industry, the maximum number which could be accommodated, participated in the conference. In view of the interest displayed, it is expected that a third conference will be held in the coming autumn.

Banking Courses.

In the Fellows' Course in Banking, which is administered by the University on behalf of the Canadian Bankers' Association, the registration has declined slightly during the year. There are at present 469 registrations, of which 179 are new registrations and 290 of those who have been previously registered. This is 8 less than last year. In addition, there were 26 students registered in the Supplementary Course in International Economic Relations. Examinations were conducted by the University for the Canadian Bankers' Association in June 1937 and January 1938 when more than 4,000 papers were written at centres scattered over Canada and several other countries where branches of the Canadian chartered banks are located.

Courses in Accounting.

Courses in Accounting are conducted by the University in co-operation with the Institute of Chartered Accountants of Ontario. In addition, the Courses have been officially adopted by the Institutes of Chartered Accountants in Alberta and in New Brunswick, and adoption in the province of Nova Scotia is in immediate prospect, in addition to the individual students who are registered in other provinces.

Registration in these Courses has again increased substantially. While in March of last year 430 students were registered in the Courses, there are this year 454; of these 372 are full registrations and 82 are partial registrations.

Once more I acknowledge the ever loyal co-operation of Professors C. E. Walker and R. G. H. Smails and Messrs. L. G. Macpherson and C. B. Wade to whose painstaking and discriminating work the impressive success of these Courses is due.

During the year Mr. A. W. Currie, the Assistant to the Director, has been on leave of absence, pursuing his graduate studies at the Harvard Business School. In the administration of the office I have been greatly helped by the assistance of Miss Pearl Paynter who has been in temporary charge of the office.

W. A. MACKINTOSH,
Director.

REPORT OF THE FACULTY OF APPLIED SCIENCE

I have the honour to present herewith the annual report of the Faculty of Applied Science for the forty-fifth session. The enrolment by years and courses is as follows:

BY YEARS

First Year	181
Second Year	191
Third Year	121
Fourth Year	111
Graduates	11
Special	3
	618

BY COURSES (Exclusive of First and Second Years)

	3rd Year	4th Year
A. Mining Engineering	47	34
B. Chemistry	2	7
C. Mineralogy and Geology	5	2
D. Chemical Engineering	19	14
M. Metallurgical Engineering	12	12
E. Civil Engineering	4	8
F. Mechanical Engineering	16	21
G. Electrical Engineering	14	10
H. Physics	2	3

As has been pointed out in previous reports the enrolment is steadily increasing and in spite of the steps taken to limit registration, this increase may be expected to continue for two or three years. The total number may go as high as 700. We still have a relatively large number of students entering our third and fourth years and as long as the mining industry is very prosperous we may expect to have these additions. If however that industry should show signs of slackening, these numbers will most certainly decrease. The opening of a mining school in Quebec, as is now proposed, will decrease the number of applicants from that province. Unless something unforeseen occurs however, we have no reason to anticipate a falling registration.

Staff.

The Faculty met with two serious and almost irremediable losses in the deaths of Professor George J. MacKay and Professor William C. Baker, both members of the staff of long standing and both occupying peculiar positions in the minds of staff and students alike.

Professor MacKay had been Professor of Metallurgy since 1918 and had made an unusual contribution to university life. His success as a teacher, his interest in his students and his very fine character are all too well known to require elaborate statement here. His death in October, while not altogether unexpected, came after a partial recovery from a long illness had aroused the hope that he might return to the work he loved.

Professor Baker, so well known to students for over thirty-five years of continuous service in the Department of Physics, had found an unique position in the life of Queen's. His most unexpected death in December was a shock to all and it will be a long time before his colleagues will be able to adjust themselves to their loss. There have been at Queen's, as indeed elsewhere, few men so intellectually honest as was Professor Baker. He will live in the memory of the generations of students who came under his care, not for what he did or what he taught them but for what he was.

The loss of two such men in the short space of three months is almost a major disaster. Temporary arrangements were made so that the work in these two departments might go on with as little interruption and loss as possible. Mr. C. L. Emery (Sc. '36) was appointed temporary lecturer in Metallurgy and Mr. M. S. Stevens (Sc. '31) of the Falconbridge Nickel Mines came after the New Year to assist particularly in the work on base metals. These two young men gave splendid service and Queen's is greatly indebted to them and to the Falconbridge Nickel Mines Ltd. who allowed Mr. Stevens leave of absence. In Physics we were fortunate to secure Mr. H. W. Harkness, Ph.D. (Sc. '13, Arts '15) who came in January to finish the year as special lecturer. Dr. Harkness has had a wide practical and educational experience and fitted smoothly into a difficult situation.

Mr. T. V. Lord (Sc. '22) of the Consolidated Mining and Smelting Co., Trail, B.C., has been appointed Professor of Metallurgy to take over the headship of that department. We are fortunate to have secured the services of a man with his excellent experience.

Professor S. C. Morgan of the Department of Electrical Engineering resigned last spring. His place was filled by the appointment of Mr. H. S. Pollock (Sc. '32) as lecturer in Electrical Engineering. The increasing numbers in Mechanical Engineering made it necessary to appoint a third man in that department. The new place was filled by the appointment of Mr. H. G. Conn (Sc. '31) as lecturer in Mechanical Engineering. Mr. H. G. Styles (Sc. '29) was appointed lecturer in Drawing to replace Mr. R. W. Stevens who resigned last spring. Much is expected of these three young men.

Courses.

There have been practically no changes in courses this year although signs point to some revision during the next few years. Changing conditions in industry necessitate constant examination of the courses. Beginning next session, Upper School Physics and Chemistry will for the first time be required of all entering students. While in the past, the majority of freshmen came prepared with the Upper School work in these subjects, the two departments have not felt free to assume knowledge on the part of all students. There was always a leaven of those unprepared. Then, too, the Upper School courses in these two sciences are now under revision so that their content may be considerably changed. The departments of Physics and Chemistry in the University will therefore, for the above two reasons, need to consider carefully the scope and character of the first year courses. This may affect the work in the higher years somewhat.

Work of the Year.

As the sessions come and go the standard of our work is constantly rising and there is more and more evidence of seriousness on the part of the great majority of students. The increasing numbers have made less individual attention possible and more reference to records rather than knowledge of the students has become inevitable. However, under our system the failing student gets full and sympathetic treatment. We give too little thought, on the other hand, to the good student. This is one of the evils of our mass production era.

Having in mind the foregoing, together with the thought of our limited facilities, the Faculty, after study of the records, last session resolved to limit registration in the first year to 175. After very careful consideration 181 were admitted and perhaps 30 fully qualified applicants were rejected. Probably another hundred who would have been admitted a few years ago were refused admission.

The method of selection was arrived at after very careful study. We had data accumulated over a period of about twelve years showing in parallel columns the marks in matriculation examinations and those in university work. Dr. G. L. Edgett of the Mathematics Department made a statistical study of these results and found a simple relationship which makes it possible to predict with some accuracy, from a study of the matriculation marks, a candidate's probable future success or lack of it. With this study as a basis, the applications as they were received were divided into three groups. In the first group were those from candidates who on their records were almost certain to succeed in our courses. These were admitted at once. In the second group were those about whom there was some doubt. These candidates were notified that their cases could not be settled until a later date when all applications would be in hand. The third group contained those who by their records could hardly be expected to weather the storm of our first year. The decision on cases of those in the second group was made finally largely on the basis of their standing and some were admitted and some were refused.

No doubt this method of selection created a little hard feeling on the part of the rejected candidates, but it is felt that the method adopted is the only method promising any degree of success in dealing with this exceedingly difficult problem.

Departmental Notes.

A new laboratory for Sanitary and Highway Engineering was built during 1937. Professor Malcolm reports concerning this new enterprise as follows:

"It was first used in December of this session—when instruction in Highway Materials Testing and in Soil Mechanics was given. After the New Year, three to four days per week instruction has been given in Sanitary Engineering on the Treatment of Water and Sewage.

"The Sanitary Laboratory consists of two complete sewage treatment plants, one for activated sludge and one for percolating filters, both using sludge digestion and vacuum filtering of the digested sludge. The water treatment laboratory consists of three rapid sand filter units, one slow sand filter unit, and a small water softener. With the chemical, bacteriological and microscopical work in the analytical and control laboratory now available to students, the work has been brought into line with the methods of operation and control in modern practice.

"The whole field in Municipal Engineering both in Sanitary and Highway Engineering has been brought to the position where large fields in research have been made available. A number of research problems have already been commenced but at this time it is not thought advisabe to announce them in detail."

In Mechanical Engineering Professor Arkley calls attention to the following items:

"The following has been added to our welding laboratory: one complete A.C. welding set with all accessories necessary for the demonstration of this type of welding to the students; one Dominion Oxygen Co. cutting machine for use with the oxy-acetylene torch by which circular or irregular cuts may be made in steel with great precision. Our students now have instruction in the three common methods of joining metals by fusion, i.e. gas welding, electric welding and welding by hand.

"In the machine shop work has been facilitated by the installation of one McDougall 9″ x 42″ cone head lathe.

"A very fine addition to our internal combustion engine laboratory is a new V 8 motor generously donated by the Ford Motor Co. of Canada.

"In our steam laboratory two 15 horse power impulse steam turbines have been installed and these make an important addition to our teaching equipment along this line."

Dr. Neish reports for the Department of Chemistry as follows:

"The ever-increasing number of students in Applied Science and also in Arts has taxed to the limit the lecture and laboratory accommodation of this building. In planning the building originally such numbers were never thought of. I am happy to say that the new Craine Building has taken two laboratory courses in Biochemistry from the east end of the attic floor, making this room available for Colloid Chemistry which has expanded greatly in the last year or so due to the fact that Chemical Engineering students are taking Colloid and last year the Metallurgical Engineering students also took the course. It is felt by the Mining Engineering department that the Mining Engineers should get some knowledge of Colloid Chemistry, particularly as it applies to flotation.

"With the large freshman class in Applied Science of two years ago now in its third year Professor Dorrance will have the largest class on record in Quantitative Analysis I. This course is given in many sections and it will be impossible to give him the teaching schedule he had this past year so it is imperative that a new lecturer or assistant professor be appointed in the department to relieve him of Medical Chemistry 1."

During the summer of 1937 the Old Gymnasium was completely gutted and rebuilt in fireproof construction. Professor Ellis reports concerning this development as follows:

"The layout was changed so that a large drafting room, an office and a blueprint room were constructed at the level of the old running track. This extra space was needed for the increasing second year classes in engineering. On the main floor the offices were changed somewhat, a large classroom provided on the south side of the building and the remainder used as a laboratory for fans, wind tunnel and work of such character. The hydraulics laboratory which is in the basement was not changed in any way.

"We have not been able to develop any new equipment as it has taken us all our time to get back our former apparatus into working shape. However the new building is a wonderful improvement in every way over the old one."

Dr. Bruce reports regarding the graduate activities in Geology in the following statement:

"The number of graduate students has this year increased to thirteen, of whom four are registered for the M.Sc. course. The others are not at present proceeding to graduate degrees.

Five of the students are graduates of Queen's, three of Alberta, one of British Columbia, one of Saskatchewan, one of Manitoba, one of Toronto and one of the University of New Brunswick.

"During the fall term the regular field excursion was made to the Madoc-Bancroft area.

"Lectures by visiting geologists were arranged for the graduate students and senior students in Geology and Mining as in other years. The list for this session was as follows:

Dr. A. W. Jolliffe, Geological Survey, Ottawa—A series of three lectures dealing with the Geology and Mineral Resources of the Northwest Territories.

Dr. G. S. Hume, Geological Survey, Ottawa—Three lectures dealing with the oil fields of Alberta.

Prof. Edward Sampson, Princeton University—"Mineral Trade and International Relations."

Dr. M. E. Wilson, Geological Survey, Ottawa—Two lectures describing the Geology and ore deposits of Western Quebec.

"The number of good students that come from other universities to Queen's for graduate work in Geology and the fact that many of them remain for two years even though only the Master's degree is being given, seems to show that the possibility of giving the Doctor's degree should be considered. At the present time the alternation of courses furnishes a sufficient amount of work if an additional course in Petrology were added. Should it be found that the increase in the number of undergraduates requires additional assistance some arrangement might be possible whereby this graduate course could be added.

"Two of the graduate students in geology were in charge of parties for the Ontario Department of Mines during the past summer. Their reports will be published in the next annual report of the Department. Research problems under investigation this year by students include studies of occurrences of titanium minerals, a detailed examination of sedimentary iron formations from Little Long Lac area, a further study of some of the sediments of the Grenville series and of the granites of eastern Ontario, a petrographic and stratigraphic study of lavas and associated sediments occurring in central New Brunswick, and a study of nepheline syenite which during the past year has become of considerable economic importance."

Needs.

The rapid growth of recent years has brought an increasing burden on most departments. There is urgency in the Chemistry, Mining and Chemical Engineering departments, where additional teaching help is needed. To maintain our fortunate position in Canada we must give our students the best possible instruction. To do this the staff must be adequate.

I have again to speak of the co-operation of the Engineering Society in many helpful ways and in particular of Mr. Murray Campbell and his associates for the good leadership they have given.

A. L. CLARK,
Dean of the Faculty of Applied Science.

REPORT OF THE FACULTY OF MEDICINE

Attendance.

The number of students enrolled during the session was 292. They were divided thus:

1st year	44
2nd year	48
3rd year	44
4th year	56
5th year	48
6th year	52

Three years ago, having regard to our facilities, it was decided that classes should not average more than 45, and indeed in the opinion of the staff the number in the clinical years should not exceed 40. When this reduction has been attained, definite improvement in methods of teaching will be possible.

The raising of the standard of matriculation requirements to four subjects (eight papers) of Upper School has resulted in an improvement in the work of the early years. With minor changes the present requirement for admission is as high as should be demanded at the present time.

To enforce the early withdrawal of students, who from one reason or another fail to measure up to the requirements of the course, is an unpleasant but necessary function of the staff. In the provincial university a recent regulation necessitates the withdrawal of a student who suffers a single failure at the end of his first year. In fairness to all concerned it is doubtful if we have been as strict in this regard as the circumstances have demanded. Only by a careful selection of candidates for admission and the early elimination of the incompetent will our position be maintained and strengthened.

The Course.

The important change in the course during the past year is connected with the Department of Biochemistry. The addition of the Craine Building and the appointment of Professor R. G. Sinclair make a distinct step forward. The place of biochemistry in medicine continually grows. It is suggestive that in a recent address on goitre, a distinguished surgeon spent his whole time with biochemical considerations. The elucidation of many obscure problems in medicine, including that of cancer, will follow increased knowledge in this field. We are now prepared to offer suitable courses in this subject and to provide adequate facilities for research.

While not under faculty control, the hospital administration have been active in their efforts to develop specialized departments in the diagnosis and treatment of disease. Recently the subject of cardiology has been placed on a sound basis. In this connection I suggest that those concerned should devote attention to the condition of goitre. Common here, this serious, disabling and frequently fatal disease, which is in some degree preventable, has not received at our hands the study which its importance warrants. An organized effort to cope with the situation should be attempted. A survey of the population of Frontenac and adjacent counties is necessary. The question of prevention is at present wholly neglected. In addition the field of research here offers wide opportunity for fruitful endeavor.

Staff.

On the completion of thirteen years' service Dr. Thomas Gibson retires as head of the department of Pharmacology at the close of the session. Starting with somewhat primitive organization and equipment, Dr. Gibson has built up an efficient department, and now hands over to his well-qualified assistant and successor, Dr. Eldon Boyd, an excellent foundation for advancement. In the department of Medicine, Dr. W.

Ford Connell was raised to the rank of Associate Professor. Dr. C. W. Bennett resigned on account of pressure of practice. Dr. J. C. Samis was appointed clinical assistant and demonstrator of Anatomy. By agreement with the City of Kingston, Dr. C. F. Blackler, M.O.H. was made assistant professor of Preventive Medicine.

Under our regulations, important changes in staff will take place in the next few years. Plans to cope with the situation should be made well in advance.

F. ETHERINGTON,
Dean of the Faculty of Medicine.

REPORT OF THE DEAN OF WOMEN

I have the honour to present the annual report of the Dean of Women.

Registration.

		1936–37		1937–38	
Intramural—	Winter Session				
	First registration	125		109	
	Previously registered	211		235	
			336		344
	Summer School		198		215
Extramural—	Winter Session		728		749
	Summer (not attending Summer School)		104		313
			1366		1621

No material changes have been made this year in the House Council Regulations governing the conduct of women students in residence.

At the desire of the House President, the Dean of Women submitted to the Ban Righ Hall Board a request that milk and biscuits be served at ten o'clock in the evening to resident students. After consideration by the Board this added service was initiated.

The Levana Society and the Ban Righ Hall Council have been very efficiently run this year by their respective executives.

The health of the women students has been satisfactory according to the report of the medical officer of the University.

Tea is served every afternoon in the Ban Righ Common Room and many non-resident students take this opportunity of meeting the resident student group.

Several new and desirable homes have been added to the list of lodgings available for non-resident students.

As always, my thanks are extended to an efficient staff and to a co-operative student body.

M. WINNIFRED KYDD,
Dean of Women.

REPORT OF QUEEN'S SUMMER SCHOOL FOR 1937

The twenty-eighth session of our Summer School closed with mutual congratulations and expressions of satisfaction, by the students' executive of the Summer School Association, and the Summer School Committee of the University. The students indicated high appreciation of the instructional arrangements and quality in general, and with all but a few of the instructors. From the University point of view the very complete organization of the various committees working for the students, and their cordial co-operation with the administration, left little to be desired.

Apparently all classes were offered which were necessary for the progress of the students; and the committees for promoting sociability and recreation were thoroughly efficient. Executive and general meetings, and the Annual Meeting of the Summer School Association were held, and the business of the Association, including election of new officers was successfully dealt with. A directory of the summer students, with home and Kingston addresses was prepared by the first Vice-President, W. G. Strong, and 1,200 copies were distributed by the eighth day of the session. The cost of this was more than covered by the advertising of enterprising Kingston merchants. A bulletin of the social, athletic and musical events for the coming week was prepared and issued regularly by the second Vice-President, Miss L. M. Hyndman.

The Committee for Athletics, Convener L. D. Jack, held tennis tournaments throughout the session, beginning with a round robin of about 130 players. Regular matches with the Kingston Tennis Club were conducted on successive Saturdays. A Softball League of teams of men and of women held games almost every evening, while outside games were played with the Kingston Clubs. A track meet with about 75 competitors was held in the Stadium on July 28; a Golf tournament at the Cataraqui Golf Club on August 3; and an Aquatic meet with swimming and diving competitions and water polo, on August 10 in Queen's Gymnasium.

The Music Committee under the guidance of Mr. John A. Eaman conducted Song Services on four Sunday evenings in Grant Hall. The singing was assisted by the Glee Club and Orchestra under the leadership of Dr. F. L. Harrison. Speakers for the different evenings were: Principal Wallace, Professor K. P. Johnston, Dean Winnifred Kydd, and Professor M. Simpson. The annual Church Service was conducted by Rev. L. M. Watts in St. George's Cathedral, with Principal H. A. Kent as special preacher.

Education films of great interest and value were presented in Convocation Hall on July 29 and 30, before about 700 students. A Glee Club concert, led by Dr. F. L. Harrison was given in Grant Hall on August 9th.

The work done by the Social Committee under the leadership of Miss Grace Anderson of Ottawa was made possible only by the intelligent and devoted co-operation of those associated with her. During the first week a rally, parade and fireworks, refreshments and a dance encouraged renewal or formation of friendships. A reception and dance in the Gymnasium on July 8th, attended by Principal and Mrs. Wallace, Dean Kydd and about six hundred students, formally initiated the evening entertainments. This was followed in succeeding weeks by a successful masquerade dance; three steamer excursions to Prescott, to Clayton, and through the Thousand Islands, evenings of singing, bonfires and dancing at Collin's Bay, an amateur theatre night, a farewell dance to the students in Education, and the final dance on August 17th. These gave to everyone opportunities for social contacts and recreational entertainment.

The Summer School Association has been very fortunate indeed in their choice of officers, and committee leaders. The amount of work associated with each of these honorary positions can be appreciated only by those who have participated in it, and the devotion shown by the President, the Conveners and their colleagues is beyond praise.

Items of interest new this summer were the educational films; the exhibition by several publishers of useful textbooks, works of reference and Teaching Aids; and the organization of a club for the wives of the students. As the attractions of Queen's as a summer resort become better known, summer divorces among our students may be reduced, and satisfactory entertainments arranged for family parties.

The total enrollment was as follows:—Arts 510, Upper School students 73, students in Education 305, Physical Culture 62. Those who made up the three last groups working under the Department of Education are all Ontario teachers. Our Arts students represent Canada more broadly. 6 came from British Columbia, 4 from Alberta, 17 from Saskatchewan, 1 from Yukon, 401 from Ontario, 75 from Quebec, 3 from New Brunswick, 1 from Nova Scotia, 1 from Prince Edward Island, 1 from Newfoundland, 2 from the United States. Toronto sent us 23, Windsor 11, London 1, Montreal 41 and Ottawa 38. The men numbered 296, the women 216.

From the Committee on Music comes the request that the Department of Education be requested to give courses in Music similar to those given in the Summer Schools in Toronto and London.

W. T. MacCLEMENT,
Director.

REPORT OF THE DEPARTMENT OF UNIVERSITY EXTENSION

I have the honour to submit herewith the report of the Department of University Extension for the academic year ending March 31, 1938. In a personal way, I am able to report only for a part of the period under review as my appointment dates from September, 1937. Prior to that time the work of the department was carried on under the capable direction of Miss Kathleen Healey.

The name of the department, "University Extension," indicates clearly its purpose, that of making available to individuals, groups and communities the curricula, personnel and other facilities of the University. While our prime responsibility is the efficient conducting of the extramural courses and the Summer School, increasing attention has been given to other phases of adult education. Here, too, the University has a definite responsibility but careful thought must be given so that our programme may be on a sound basis. The need for adult education is obvious but to be effective the urge must come from individuals and groups themselves. As far as possible our policy has been to work through existing organizations. Certain activities have been initiated and we are looking forward to seeing our work in this field greatly widened.

Extramural Courses

Registration.

There has been a decrease in our extramural registration for 1937-38, due possibly to the new regulations of the Department of Education. It can be expected that this decline in numbers will be even greater. Under regulations recently issued students working for the Permanent First Class Certificate may substitute as high as four professional certificates of the Department of Education for the five university courses. English 2 is now the only university course that must be taken.

In the summer of 1937 561 men and 494 women were registered, making a total of 1055. This is a decrease of 158 from the summer of 1936. In the winter of 1937-38 there were 1468 students, 719 men and 749 women registered with this department—a decrease of 162 from last winter. Of this number fifteen were taking work at Albert College, Belleville. As some students were enrolled in both winter and summer sessions as well as the Summer School the total registration for the year 1937-38 was 1912, a decrease of 135 from the previous year. Comparative figures for the past five years are as follows:

	1933–34	1934–35	1935–36	1936–37	1937–38
Net registration	1033	1101	1759	2047	1912
Summer	618	667	781	1213	1055
Winter	753	833	1459	1630	1468

In addition to the students registered in Arts there were nineteen students taking work by correspondence for the Department of Education examinations in June. This brings the total number of students registered with this department to 1931.

Occupation and Location of Students.

About 80% of the students give their occupations as teachers, although an increasing number of Civil Servants and professional persons are registering. A few are completing work for a degree, but the majority are taking special courses in which they are particularly interested.

The number registered from outside Ontario remains about the same with a slight decrease from Saskatchewan but with an increase from Alberta. The decrease in the registration from Ontario is general throughout the province. The distribution for the past two years is as follows:

	1936–37	1937–38
British Columbia	29	29
Alberta	40	48
Saskatchewan	51	40
Manitoba	5	10
Western Ontario	227	186
Northern Ontario	320	300
Central Ontario	479	455
Eastern Ontario	715	661
Quebec	155	157
New Brunswick	6	5
Nova Scotia	4	4
Prince Edward Island	2	3
Newfoundland	2	4
United States	9	9
Yukon	–	1
England	1	–
Bermuda	1	–
British Guiana	–	1

New Students.

During the winter 326 students registered for the first time as against 435 in 1936-37 and 663 in 1935-36. Of these students 129 have stated their intention definitely of completing a Permanent First Class Certificate only.

All students completing work for this Certificate have five classes of Upper School. The Matriculation standing of the new students is as follows:—

Entrance Standing.

Honour Matriculation	302
Pass Matriculation	17
General Students	6
Over 21 and admitted conditioned	1
Total	326

Ages.

The following shows the ages of the new students:—

17	2
18	4
19	20
20	39
21-24	167
25-29	61
30-39	23
40-50	4
Not stated	6
Total	326

Graduate Students.

Extramural work provides an opportunity for graduate students to take refresher courses and to raise their standing. The number is decreasing slightly due largely to the impossibility of securing final year courses either extramurally or at Summer School. Twenty-eight graduates were registered during the winter session carrying on work as follows:—

Honour B.A. raising standing for M.A.	1
Pass B.A. raising standing to Honours	11
Honour and Pass B.A. taking Refresher Courses	8
Pass B.A. taking work for Quebec High School Cert.	1
B.Sc. taking work for Science Specialist	1
B.Sc. taking work for B.A.	1
B. Com. taking work for B.A.	1
B.A., B. Com. taking work for Commercial Specialist	1
Graduates from other Universities	3
Total	28

Summer School.

Full information concerning the 1937 Summer School is to be found in Dr. MacClement's report. It is sufficient to state here that 510 students were registered. The curriculum is being enriched so as to include courses of interest not only to those proceeding to a degree but to teachers, graduates and others who desire to improve their scholarship in particular lines of study. The Summer School offers an ideal opportunity to combine education and recreation.

Queen's Summer School Association.

The Association and its branches in Toronto, Ottawa and Montreal are filling a very real need. We hope that branches will be organized in a great many other centres. They aid in making possible that closer association and sympathetic understanding which is so essential between the students and the University. I had the pleasure of addressing the members of the Ottawa and Quebec branches at their annual dinner meetings. In each case, full opportunity was given for questions and discussion.

Extension Tutorial Classes.

We appreciate fully the difficulties with which our students are faced and are anxious to be of still greater help to them. In order to provide opportunities for a closer contact Extension tutorial classes were established as follows:—

Ottawa—English 2, 18; History 3; Philosophy 1, 2 and 4, 20.
Kingston—English 2; History 3, 13; Philosophy 1, 2 and 4; Mathematics 2, 10a.
Belleville—English 2; History 3; Philosophy 1, 2.
Peterborough—English 2; History 3.
Port Arthur and Fort William—English 2, History 3, Philosophy 2.

The classes at Ottawa and Peterborough were held in the Normal School; at Belleville in Albert College; at Port Arthur and Fort William in the Port Arthur Technical and Commercial High School.

We find that many students have difficulty in grasping just what is expected of them. Therefore, the nature of university work was explained and effective methods of study and of preparing essays and exercises were outlined. At each class a section of the course was dealt with and full opportunity given for questions and discussion. These classes were held on Saturdays and were conducted by members of the staff and others well qualified to deal with the courses. It is desirable that such facilities should be provided even where it is not possible for members of the staff to be present. As a start classes were organized in Port Arthur and Fort William in History 3, English 2 and Philosophy 2. They were in charge of Miss Maude L. Brock, Miss Belle M. Elliott and Mr. Allan G. Baker, all Honours graduates of Queen's University and thoroughly familiar with the courses.

The 23 classes were conducted by 22 different tutors and a total of 71 meetings were held. They were taken advantage of by nearly 300 students. The following members of the

staff participated: Dean J. Matheson, Dr. Norman Miller, Dr. G. H. Clarke, Professor W. Gordon, Professor J. A. Roy, Professor H. Alexander, Mr. C. J. Vincent, Dr. G. S. Graham, Dr. G. Humphrey, Mr. H. M. Estall and Dr. T. Goudge.

From the many comments received the students found these classes of great value. They should be extended both as to courses and centres where the registration is sufficient.

Memoranda.

Based on difficulties as evidenced in the classes and from the exercises memoranda were prepared and sent to students in the various courses.

Tutorial.

The importance of the tutorial work in connection with extramural courses cannot be over-emphasized. As far as possible, the tutorial staff should be a permanent one. On the whole, during the past year this work has been satisfactory. I should like to mention in particular the assistance given by Mr. F. J. Wilson and Mrs. D. M. Chown. Mr. Wilson also conducted Extension tutorial classes in History 3 and 13 at Kingston.

While our courses were designed originally for teachers, they should have a definite appeal to a great many others, particularly members of the Civil Service. Discussions have been carried on with individuals and the matter of further education for its members is receiving the careful attention of the Civil Service Association. The University should give serious thought to the establishment of courses in Public Administration. Queen's is particularly well fitted to carry on this work.

Radio.

Queen's is fortunate in possessing its own radio station CFRC. Its operation in conjunction with the Kingston *Whig-Standard* would seem to be working out to our mutual advantage. Radio education has tremendous possibilities. The station gives us an opportunity of sharing in this activity. The station is now operating on a regular schedule of 13¾ hours five days a week, 14¼ hours on Saturday and 11¼ hours on Sunday, making a total of 94¼ hours per week. Approximately two-thirds of the programmes are those of the Canadian Broadcasting Corporation for which CFRC forms a very effective outlet.

The University's activities in connection with the radio are three fold:

(1) Quarter hour programmes were given regularly each evening Monday to Friday inclusive, from October 11, 1937, to April 1, 1938. They covered a wide variety of subjects, literature; science—pure, applied and medical; the social sciences; music and art; religion; book reviews and general topics. Of the 117 programmes, 84 were presented by members of the staff, 2 by the students and the balance by other persons well qualified in their particular fields. Our radio schedule was carried regularly in the Kingston *Whig-Standard* and in the newspapers of Napanee, Gananoque and Picton.

(2) Programmes were presented by remote control from Convocation and Grant Halls. These included the addresses of Mr. J. M. Macdonnell to the Alumni Reunion and Sir Edward Beatty at the Fall Convocation, which were carried by the C.B.C. over a national net-work—the Chancellor's lectures and the address of the Hon. J. A. Gardiner and of the Principal to the Theological Alumni Conference—The Armistice Day Service—the Public Lectures—the University Sunday services and the addresses of various prominent speakers who visited the University. In all 25 such broadcasts were made from October 15, 1937, to March 15, 1938.

(3) Care was taken that C.B.C. programmes of a definitely educational nature were carried over CFRC. These included such series as "The Canadian Constitution," "Labour on the Air," "Life and Learning," "Whither Democracy."

Our main problem is still the question of coverage. An increase in power and hence in the area over which the Queen's Station could be heard satisfactorily is desirable.

Education Week.

The University co-operated in the observance of National Education Week, February 6-13. I served as a member of the Kingston committee. Our regular period on the radio each evening was made available and used for a series of special broadcasts in which the following members of staff took part —Dr. H. L. Tracy, Dr. Norman Miller and myself.

Public Lectures.

The series of lectures this year, for which the department handled the publicity had as its general theme "Five Political Creeds." The lectures were given in Convocation Hall and were broadcast over the Queen's Radio Station. They were well received and largely attended by both the students and the general public. The speakers and their subjects were as follows:—

The Meaning of Fascism—Professor L. E. Law.
The Meaning of Communism—Professor F. A. Knox.
The Meaning of Socialism—Professor J. A. Corry.
The Meaning of Conservatism—Professor A. E. Prince.
The Meaning of Liberalism—Professor C. A. Curtis.

The publication of these lectures provides a welcome addition to the material available for study groups.

A public lecture was given in Convocation Hall by Mr. Robert J. C. Stead of the Department of Mines and Resources, Ottawa, on the subject "Canada's National Playgrounds."

Extension Lectures.

A series of five lectures each were arranged in Gananoque, Kingston, Belleville, Cobourg and at Hatfield Hall, Cobourg, and three each in Brockville and Peterborough. These lectures were self-supporting. In Belleville and Kingston all were on International Affairs. In the other centres in addition lectures on Literature, Drama, Art and Psychology were included. At all lectures opportunity was given for questions and discussion. The following members of the staff participated as indicated—Dr. L. J. Austin (3), Mr. André Biéler (3), Dr. E. L. Bruce, Dr. G. H. Clarke, Dr. G. S. Graham (3), Dr. G. Humphrey (2), Mr. R. F. Legget, Dr. W. E. McNeill, Professor A. E. Prince (5), Professor J. A. Roy (5), Dr. J. M. Shaw, Dr. L. S. Stavrianos (2), Dr. R. G. Trotter, and Mr. R. M. Winter (2). The interest has been such that we can look forward to widening their scope and increasing their value by the encouragement of consistent study through the medium of study groups. This plan was followed in Belleville.

Speakers Bureau.

Arrangements were made whereby on a number of occasions members of the staff addressed Rotary and Kiwanis Clubs in Brockville, Gananoque, Kingston and Napanee as well as various literary, religious, educational and agricultural societies in the surrounding communities.

The department assisted the Rotary Club of Gananoque in organizing their "International Night" when they entertained a group from the University of 35 students and members of the staff.

Workers' Educational Association.

Queen's has continued along with the other universities in actively sponsoring the W.E.A. The Association has now extended its activities to all the provinces of Canada and is proving to be a very effective medium of adult education. It is an organization of working men and women whose sole purpose is to give workers the opportunity of acquiring a broad and liberal education. Its chief aim is not to teach what to think but how to think. The University provided both teacher and accommodation for a class on International Affairs. The tutor in charge was Professor A. E. Prince, whose services were greatly appreciated. Mr. Francis Kinsella of the Kingston class was awarded the York Scholarship by the W.E.A. This entitles him to a year's study at Coleg Harlech in Wales. Dr. W. E. McNeill, Professor A. E. Prince and Professor F. A. Knox are members of the Advisory Committee of the Kingston Association. I am serving as Vice-President of the Kingston group and in the general association as a member of the Tutorial Committee and of the Board of Trustees responsible for the administration of the grant from the Carnegie Corporation.

Boy Scouts and Girl Guides.

Through the courtesy of Dr. R. O. Earl and his associates arrangements were made whereby members of the above organizations are enjoying the opportunity of meeting at the University Museum on Saturday afternoons. Field trips will be taken during the spring and early summer.

External Relations.

A definite endeavour has been made to come into close contact with the surrounding community. I had the privilege of being present at conferences of Public School Inspectors at Ottawa and at Peterborough. Seventeen Teachers' Institute Conventions were attended, two by Dr. R. O. Earl, one by Dean Matheson and fourteen by myself. At each we had the opportunity of addressing the assembled teachers. On invitation I have attended and spoken to the members of some forty agricultural, fraternal, service, educational, dramatic, literary and church societies. A number of secondary schools were visited and the senior students addressed.

In closing may I express my sincere thanks to Principal Wallace, Dr. W. E. McNeill, Dean Matheson and the members of the administrative and teaching staffs for the sympathetic and active interest which they have taken in the work of the department.

The whole-hearted co-operation received from the staff of the department has been very gratifying. I should like, in particular, to mention Miss Kathleen Healy. Her advice and assistance has been most valuable.

R. M. WINTER,
Director.

REPORT OF THE LIBRARIAN

I have the honour to present my annual report upon the work of the University Library.

Stock of Books.

At the beginning of the year 1937-38 the University Library consisted of 174,807 volumes. In the past twelve months we have added 2,952 volumes by purchase; 1,305 volumes by gift; 8 by exchange with other libraries; and 2,625 by rebinding and taking into stock volumes in Miller Hall not previously accessioned. Our total additions are thus 6,890 volumes. We have deducted as lost or withdrawn during the year 221 volumes. At the beginning of April, 1938, we carried forward a stock of 181,476 volumes.

Issues, Circulation Department.

The number of books borrowed for home reading during the year was 31,241, an increase over the previous year of 2,701 volumes. 1,663 books and periodicals were brought from the stacks for consultation in the Reading Room. This is an increase of 535. The number of registered borrowers, however, showed a net decrease of 40, the considerable drop in the numbers from the summer school being offset by an increase of 84 among the students during the winter session. The daily average number of volumes issued during the session was 162.

Reserved Book Room.

In 1936-37 51,257 volumes were issued. This year we record 60,472 an increase of 9,215. In addition, 2,619 periodicals were lent to professors, students and graduates. The increase in the work of this department has been very large and quite beyond the power of a single assistant to manage unaided. The chief impact is felt during the winter session. In 133 working days, from September to the end of March, the reserved books averaged a daily issue of over 395 volumes. This was only made possible by the help of reference assistants and with members of other departments aiding during emergencies. On October 19th, 524 volumes were issued during the day, which issue is our record up to the present.

Reference Department.

The Reference department has suffered from a lack of continuity in personnel. Miss Gwynneth Gwillim resigned in May and Miss Marion Brown was placed in charge with Miss Margaret McRoberts as her assistant. In January Miss Marion Brown departed and Miss Margaret O'Connor was taken from the Cataloguing department to reign in her stead. Nonetheless, the work that the department has accomplished has been of a high order.

There is a marked increase in the use of such indexes as the "Readers' Guide". The vertical file has received many additions and nearly 3,000 new entries have been made in the Index of Periodicals. Bibliographies have been prepared and varied and interesting questions have been answered. The course of a day may bring enquiries for material on "Railway Unification in Canada", "Japan's Foreign Relations", "Present Day Conditions in Spain", and "Colour Photography".

Documents.

The increasing use of documents reported last year has been maintained. Rearrangements have taken place by which the papers most in use have been shelved near the Reading Room. The majority of the volumes of the Sessional Papers have been bound; cataloguing continuing steadily; and some of our gaps were filled. The total circulation of documents was 5,384, which makes an increase of 1,356 over the figures for the previous year.

Students of Economics and History are the principal borrowers, but we are pleased to report that students in both Medicine and Science are coming to the collection for government material. Summer school students were especially interested in the publications of the United States Office of Education. Cataloguing of the documents has continued throughout the year. All the Canadian documents have now been catalogued, and a subject catalogue is to be added as soon as possible. The sorting of the British Sessional Papers has been finished and most of the volumes bound. Maps are in course of arrangement and it is hoped to have, in Room 210, cases in which our small collection can be arranged and catalogued.

Order Department.

The normal work of the Order department involves a large number of operations. 2,135 book orders have been sent out and this number does not include the books and periodicals ordered either for the Industrial Relations Section or for the Department of Education. Lists of books added to the library have been sent every month to departmental heads and others, and the monthly financial statements have been prepared and sent to the library curators.

Extramural students and graduates using the library by mail service have borrowed 761 volumes during the year. The library has borrowed for the use of faculty and students 274 volumes and has loaned to other libraries 55 volumes.

A large number of books in need of rebinding and repair have been sent to England and to binderies in Ontario. The University binder dealt with well over 1,000 volumes during the year; 254 were bound, 129 were rebound, 486 repaired, and 225 pamphlets were cased.

Departmental Libraries.

The cataloguing and rearrangement of departmental libraries has enabled us to pay more attention to the issue of books. While we have not yet attempted to keep an exact account of all the volumes consulted, we have obtained figures for those that have been issued for home reading. It may be emphasized that the record is small in comparison with the amount of use that is being made of the books. The Medical Library shows an increase of 382 volumes over the total recorded for last year.

Medical Library.

The considerable increase of use in medical books was due to third and fourth year students being given exercises that obliged them to obtain information from books and journals. We were obliged in some cases to restrict the length of time that books could be retained. A much more considerable use of the Biological Library might be recorded if it were possible to note all the consultations. Often, however, professors took out a number of books which were passed round among the classes. At times the number of students in the room has been so large that chairs have had to be borrowed from the laboratory. The addition of a vertical file for medical pamphlets would be of much use, enabling us to preserve valuable, but fugitive, material.

Cataloguing Department.

In February the Cataloguing department began the rearranging of the books in Miller Hall, the only departmental library yet uncatalogued.

The transfer of Miss Margaret O'Connor to the Reference department occasioned a slight disorganization, but the department is now up to date.

The whole of the books in French Literature were reclassified according to the new Library of Congress classification published during the year.

The cataloguing of the McNicol collection has been put aside for the present.

An attempt to obtain the cost of cataloguing under the cost accounting system was made at the beginning of the year. It proved to be 65c per volume, which is comparable favourably with the cost in other large university libraries.

Total Issues.

The total of recorded issues is as follows:

Reserved books		60,472
Circulation		31,241
Periodicals		2,619
Extramural		761
Documents		5,384
Reference books from stacks consulted in Reading Room		1,663
Medical and Biological Library		3,892
Other departmental libraries (where recorded		1,403
Inter-library loans:		
Borrowed	274	
Lent	55	
		329
Total		107,764

Issues.

This total is 16,780 in advance of our previous record. Never before have we noted the issue of over 100,000 volumes. It may be added that in 1926 we recorded an issue of 22,000, which was then supposed to be the upward limit that the circulation could reach under the existing conditions; which conditions still prevail.

Exhibitions.

A glass covered case previously in the Music Room was removed to the Reading Room at the beginning of the summer and used to exhibit books and materials of interest to students. Each exhibition lasted about a fortnight and most of them attracted a good deal of attention. Thus, we were able to show scarce Canadiana, early printed books, fine bindings, letters from celebrated people, postage stamps, bookplates, and coins and medals.

Art Room.

Students of Art and of History have shown a real interest in the art books, and in the picture collection. Cataloguing of the pictures was undertaken and will be completed before the Summer School opens in the coming year. There is a definite need for more cabinet space in which to house the picture collection, as that has outgrown the original case.

Gifts.

During the year we received 800 volumes and pamphlets as gifts from a large number of donors. To each of these donors the thanks of the library has been expressed. Dr. Lorne Pierce again has been our most generous benefactor and his collection of Canadiana has overflowed the space allotted to it in our Treasure Room; in fact, most of the library's activities could be much increased had we more space.

Staff.

Few changes this year have taken place in the library staff. As previously noted we have lost Miss Gwynneth Gwillim and Miss Marion Brown. Miss Honor Bailie returned in September to take the place of the former and Miss M. Sunshine Young, a graduate of Mount Allison University, and of the Toronto Library School, was appointed in February. The work of the staff throughout the year has been excellent.

E. C. KYTE,
University Librarian.

REPORT OF THE COMMITTEE ON SCIENTIFIC RESEARCH

The Science Research Committee makes its annual report on research activities during the past session as follows:

During the summer the usual procedure of providing assistants for summer work and certain necessary equipment and supplies for the members of the teaching staff was continued. This makes it possible for these professors to prosecute work during the summer months which otherwise would be impossible. As a by-product of this plan, a large number of men have begun their scientific careers by serving as research assistants to a member of the staff during the summer. Indeed, there are several men now on the teaching staff who began their scientific work in this way some years ago.

The contrast between the situation of to-day and that of twenty years ago when the Committee began its work is very great. Then, a small amount of work was done by a few hard-pressed professors, now we have a large amount of excellent work, produced under somewhat better conditions. There is still, however, much room for improvement and development. While the summer work is of the greatest value, there is a real need for men having more time at their disposal during the session. Research in most fields is not seasonal. It requires continuous thought and experiment. We feel that, with the solid foundation that has been laid, a new outlook is necessary, one with more thought being given to the improvement of the conditions under which the members of staff carry out researches. A relatively small decrease in teaching load would make research the year round possible. The needs for future development will be found at the end of this report.

Without the hearty support of the administrative officers of the University and the Board of Trustees, very little could be done and the accomplishments of the past two decades have been made possible by their continued support.

The record of accomplishments which follows is most gratifying. It contains more of achievement than any previous report. The Research Committee feels that the preparatory work of the years of effort has been more than justified. They present the list of individual reports with a feeling of optimism.

Dr. E. L. Bruce reports as follows:

A study of certain occurrences of titanium minerals in Eastern Ontario was undertaken nearly two years ago. N. H. Fraser has now completed detailed investigation of an unusual dyke containing large titanite crystals. The titanite proves to be somewhat unusual in its purity, especially the low content of iron. The deposits of titaniferous magnetite occurring near Eagle Lake and that near Newboro are being studied by A. P. Fawley. Ilmenite and magnetite occur in intimate intergrowths in these deposits and the behaviour of the intergrowths at high temperatures is being studied. A. C. Freeze has been engaged during the past two years on a petrographic study of lavas of Middle Devonian age from Central New Brunswick. W. T. Love is working on the petrography of the Grenville biotite gneisses. This is a continuation of a study of garnetiferous gneisses made last year. J. W. McBean is making a similar investigation of iron formation from the Little Long Lac area. It is hoped this will determine the original character of the sedimentary series in which they occur and will show the metamorphic changes they have undergone. J. E. L. Evans is completing a study of the variations in certain granite masses in Eastern Ontario. This is a continuation of work that has been carried on for several years. M. R. Keys has now completed a detailed study of the paragenesis of the ores of the Hollinger mine. This was begun three years ago. A considerable amount of information was obtaind from collections available here. This has been augmented by work at the mine.

With Mr. L. Katz, Dean A. L. Clark has continued on the ratio of Specific Heats of Gases, a ratio of fundamental importance, depending as it does on the structure of the gas under observation. Accurate measurements of this quantity may assist in our conceptions of molecular structure. They have evolved a new method which is yielding results of high accuracy. The results obtained this year are very satisfactory as they may be duplicated with as high, if not with higher precision, as those obtained by other observers. Air, carbon dioxide, and hydrogen have been studied and nitrogen, oxygen, helium, neon and argon will be investigated during the summer.

During delays in the past summer they worked on a calculation of the Joule and Joule-Thomson effects in gases and a paper embodying the results has been published in the Canadian Journal of Research.

A paper on experimental probability has been published by Dean Clark. This embodies results obtained over a period of two years and completes the work begun several years ago. A total of half a million trials was recorded and the results are in splendid agreement with those obtained by calculation.

The work of the Department of Bacteriology is summarized below:

Dr. Reed has continued the study of bacterial variation. A paper was published in the Journal of Bacteriology indicating that variation in certain characteristics may occur independently — a matter of considerable theoretical interest.

Dr. Reed and Dr. Orr have undertaken a rather extensive study of subacute bacterial endocarditis. A large group of cultures have been collected from active cases. These have been found to fall into several groups differing antigenically. Immune sera has been prepared from the antigenic groups and their effectiveness is being tested in experimental infections. At the same time a study has been made of the action of the new drug prontosil on these infections, with very promising results. A part of these results is now in process of publication.

Dr. Reed, Dr. Orr, in cooperation with Dr. Boyd, have continued a study of the action of lipids in phagocytic immunity. Two papers have been published indicating that certain infections are accompanied by an increase in leucocytic lipids, whereas experimental phagocytic immunity in rabbits may or may not be associated with an increase.

Dr. Reed, Dr. Orr and Miss Hope have continued a study of antigenic differentiation of Cl. welchii and Miss Baker has continued the study of toxin formation by the several antigenic types. Parts of this study are now in process of publication.

Dr. Krotkov has repeated his experiments on the extraction and isolation of the sugars found in young and mature wheat leaves. Using solid carbon dioxide to freeze the leaves before pressing the juice from them, twice as much juice was obtained. The approximate natures of the sugars from these juices have been determined and work is now in progress on the isolation of the various types of sugar and their identification.

Dr. J. A. McRae had found previously that the work of a number of students on the rearrangement occurring when $\alpha\alpha'$—diarylsuccinamides change into diarylsuccinic acids showed that the rearrangement is confined to this type of succinamide and that it probably takes place through the intermediate formation of diarylhydrouracils. A lengthy examination of the action of sodium hypobromite on diphenylhydrouracil and a closely related substance has recently been conducted with the assistance of Mr. J. A. Martin. The results obtained amply confirm this supposition but at the same time give indications that the hydrouracils are not the sole intermediate products.

Dr. G. H. Ettinger has been investigating the source and distribution of acetylcholine with the assistance of B. Bernstein and G. L. Bateman, that of the latter being made possible through the courtesy of the Banting Research Foundation. Through the cooperation of the Department of Obstetrics, 29 human placentas were obtained from the General Hospital and the Hotel Dieu. The results obtained are reported as follows:

1. The acetylcholine content of the human placenta is lower than most investigators report. In naturally born, full-term placentas the amount may vary from 6 to 30γ per gramme, but it is not evenly distributed through the placenta. Other investigators report as much as 140γ per gramme.

2. The alcoholic method of extraction used by Chang gives much too high yields. We used 10% trichloracetic acid for extraction. By this method we could recover quantitatively acetylcholine which we had mixed with macerated placental tissue. Moreover, when assayed on the frog's rectus muscle, we found that an alcoholic solution of acetylcholine, matched against a standard aqueous solution, was potentiated as much as 100%.

3. The amount of acetyplcholine in the placenta increases progressively up to the *fifth hour* after delivery, particularly if it be incubated. It may be doubled or trebled in this time. The amount of choline increases similarly.

4. There is no relation between the amount of choline and the amount of acetylcholine in different placentas. The addition of choline to macerated placental tissue which was then incubated did not increase the yield of acetylcholine. It is probable, then, that choline as a substrate for the enzyme system which produces acetylcholine is always present in excess.

5. There is very little acetylcholine in the placenta of the cat.

There is no detectable acetylcholine in the placentas, fresh or incubated, of the rabbit, the rat or the mouse.

There is no detectable acetylcholine in the uterus of the rabbit during oestrus or pseudo-pregnancy.

Dr. Ettinger has also been investigating the effect of chronic excitement of the vagus nerve in the dog induced by daily transfusions of a solution of the pressor principle of the pituitary body. For this he had a grant from the William Spankie Memorial Medical Research Endowment Fund, and the assistance of R. J. Livesay, who holds a Near Bursary. This experiment must be continued for at least two years before results are available.

Dr. L. A. Munro has continued his work on the properties of gels and in particular has been studying the factors affecting the activity of alumina gels. Mr. D. J. Dewar has assisted in this work, which is still in progress.

An investigation was also carried out with some success to ascertain if it was possible to devise improved methods for the detection of certain acid radicals.

Dr. B. W. Sargent has continued his study of the beta radiations emitted by actinium and its products. An analysis of absorption curves shows that actinium B emits a complex spectrum, the main portion having an end point at about 1.35 million volts energy. It being of considerable importance to determine these end points accurately, this end point and that of actinium C'' are being obtained by comparison with those of radium E and uranium X_2 which are known accurately. In the course of this work, the half value periods of actinium B, actinium C'' and uranium X_1 were obtained with high accuracy.

An automatic cloud chamber, suitable for the investigation of many problems in atomic and nuclear physics, is under construction. Very little remains to be done to complete this project.

Dr. R. O. Earl has made a study of the culture and crossing of certain species and varieties of the genus Nigilla. In addition seedling of Nigella were treated to various X-ray dosages and afterwards grown in the garden. Pronounced abnormalities resulted in some cases and seed obtained. Future work may determine to what extent and in what way these results are heritable.

Most of the crosses made were of the first generation so that results will not be apparent for one or two generations more. This work is being continued on a greater scale as larger populations are required in order to get significant results.

Dr. J. E. Hawley with the assistance of Mr. W. H. Salter has effected the concentration of a chromium bearing mica and a detailed study has been started so as to determine and correlate the optical properties and chemical composition of this mineral.

Mr. T. A. Lazier has been assisting Dr. Hawley in an investigation of the peculiar association of tungsten and tin with some of the gold ore at Great Slave Lake. Mr. W. J. McGill is studying nepheline bearing syenites and haematites and H. G. Rice auriferous pyrite.

Mr. N. W. Buerger has been making a further study of the unmixing of cubanite ($CuFe_2S_3$) from chalcopyrite ($CuFeS_2$) solid solutions. The segregation planes along which cubanite occurs in chalcopyrite have already been determined, but, in view of new data on cubanite, special attention is now being given to structural relationships existing between the two minerals in order to explain the phenomenon. This involves the finding of planes in the cubanite structure which have closely similar atomic arrangement to the known planes parallel to which it occurs in chalcopyrite. It is hoped that it will be possible in this way to correlate the whole Cu-Fe-S system from a structural standpoint with special reference to the cause of unmixing and the control of intergrowth position by structure.

Dr. James Miller, with the assistance of Mr. G. Large, has investigated the significance and staining properties of the eosinophil cells of the human appendix. This work forms the basis of a paper which is under preparation. Mr. A. E. Smith has been working on the lipoid content of sera giving positive and pseudopositive results with the Wasserman test. Dr. Miller has also been collaborating with Drs. Boyd and Ford Connell in an enquiry into the lipoid composition of the blood plasma in hyperthyroidism compared with the types of enlargement found in the thyroid gland. A paper will be presented by them at the coming meeting of the Royal Society.

Under the direction of Dr. J. Wyllie, Mr. T. W. McParland has been investigating the application of the phosphatase test to raw and pasteurised samples of milk. This test was devised by Kay and Graham in 1935 and applied to the control of pasteurisation in Britain. It depends on the production of a blue colour as a result of Folin and Ciocalten's phenol reagent — an enzyme normally present in raw milk but destroyed when milk is heated to a temperature of 145°-150°F for 30 minutes. Owing to the difference in the official pasteurising temperatures in Britain and Canada it was felt desirable to ascertain whether the test was applicable to Canadian conditions and to investigate the factors concerned in the production of the blue colour. Several methods were used to measure the relative depth of the colour, a pholetometer giving the most satisfactory results and a calibration chart is being prepared in accordance with the pasteurising temperature prescribed by law in Ontario. The test was found useful in controlling the efficiency of pasteurising technique, for a temperature difference of 1½° below 143° could be detected.

As the result of the examination of over 300 milk samples it may be stated confidently that the phosphatase test is capable of distinguishing raw milk from pasteurised milk as well as detecting errors in pasteurisation technique. The results are being compiled so that they may be published.

Dr. W. A. Jones with the assistance of Mr. G. Fiddes commenced an investigation on the effect of X-ray treatment of bacterial infection of the skin of the rabbit. The preliminary results were inconclusive and it was found necessary to do more work on the culturing of the bacteria, so as to get rid of clumping, etc. Bacterial toxins were irradiated as well as bacteria and both of these were injected into the skin of rabbits in an endeavour to find out whether X-ray treatment of an inflammatory lesion of the skin caused by bacteria responded favourably because of the effect of X-rays on the bacteria and their toxins or upon the body tissues.

This research led them to try the effect of irradiating bacteria in both massive and fractional doses and there is some indication that fractionated doses kill bacteria when massive doses do not. Having got rid of the troublesome factor of clumping by filtering the bacteria, the problem should prove easier, and more definite results should be obtained.

Dr. Eldon M. Boyd, with the assistance of Mr. Malcolm Brown, Rhodes Scholar for 1938, began a study of the water balance hormone of the posterior hypophyses. Preliminary results have been published in the American Journal of Physiology. They embody an investigation of the factors which affect the uptake of water by frogs when they are injected with this hormone. The effects of sex, body weight, species and mode of administration of hormone; the temperature, pH, salt concentration and volume of the water bath and the hormone content of various types of extract were determined.

In collaboration with Mr. J. F. Gilbert, Professor R. L. Dorrance has been studying the deposition of copper by internal electrolysis. The results have shown that, in a cell consisting of a lead cathode immersed in a solution of lead nitrate contained in a porous cup, the anolyte containing copper ions in addition to other metallic ions and a platinum anode, copper is deposited quantitatively when the cell is short-circuited. With the assistance of Mr. H. K. Coulthart, the study of complex metallic cyanides has been continued. The results show that the composition of the complex cyanides of cadmium and nickel can be represented by the formula $KCd\ (CN)_3$ and $K_2N\ (CN)_4$.

Professor J. K. Robertson's work on problems in connection with high frequency discharges has been continued. New apparatus has been constructed by Mr. R. H. Hay which has simplified the work considerably. In particular he has built a rectifying unit which now replaces a noisy motor generator. With the aid of this apparatus, Mr. Hay has made good progress in the examination of the removal of thin deposits which coat the inner walls of tubes carrying gaseous high frequency discharges. The problem is quite a complicated one, but much significant information has been accumulated.

As there is now available a range in frequencies running from 1.5 to 300 megacycles per second, a much greater range than has hitherto been available, the spectroscopic examination of high frequency discharges will be continued by Professor Robertson along lines previously reported.

Observations have been made to compare the resolving power of a telescope as estimated by a visual method with that obtained by photographic means. Through the courtesy of the Department of Physics of the University of Toronto the plates taken were examined with a microphotometer and it is hoped in the near future to publish the results of this investigation.

Dr. J. Stanley has continued his work on the growth of populations of the flour beetle *Tribolium confusum.* Work in previous years had shown that, in agreement with the mathematical theory, populations in which the eggs were not permitted to hatch, and so accumulated, tended asymptotically towards a number of eggs so great that the eggs were found and eaten as rapidly as laid.

However, it was also found that this asymptotic value was much lower than theory demanded, though the agreement as to general form of the curve was good. It was found that this was due partly to the fact that under conditions of intense egg-eating a nutritional deficiency occurred, resulting in a decrease in the egg laying rate of the adults, amounting in some cases to complete sterility. This has now been offset by supplementing the flour diet by added ground wheat germ.

A further and more subtle effect has been found, in that it has been possible to show that if one considers (as was not done before) the time spent in contact with eggs, this time becomes equal to the total elapsed time when the eggs become so numerous that a beetle is always in contact with at least one egg. This must occur when the "mean free path" between successive egg-contacts becomes zero. This means that this number of eggs acts in the population as would an infinite concentration, and thus no greater concentration than this can be built up.

The mean free path is zero, by calculation when the eggs number some 1250 to 1300 per 32 grammes of flour. The population is now oscillating between these figures, and the general form of the curve has shown excellent agreement with theory.

Other phases of the work, such as determinations of mean speed of movement are being continued, but as the technique is very slow, there is little new to report.

Dr. G. B. Frost has been engaged in the following researches and the results are summarized below:

1. Adsorption of Gases on Finely Divided Manganese (with Mr. R. P. Graham).

During the past few years a great deal of work has been done upon the absorption of gases on metal surfaces, but no data are available for manganese metal, this being due probably to the difficulty of obtaining this metal in a finely divided condition and to its tendency to become rapidly oxidised. Both these difficulties have been overcome and adsorption isotherms for hydrogen on this metal have been obtained at a series of temperatures as have also data on the rates of absorption. It is planned in the immediate future to extend these observations to several gases and also to study the kinetics of the reaction of this metal with oxygen. The results obtained may have considerable theoretical interest.

2. Vapour Pressures of Dilute Manganese Amalgams (with Mr. H. Beachall).

Considerable experimental difficulties, now mostly overcome, have been met in this work due to the sensitiveness of these amalgams to traces of oxygen, etc. A series of measurements have been made for very dilute amalgams. The indications are that at the temperature of working (250°C) two liquid phases exist.

3. The Preparation of Manganous Oxide.

Last year with the assistance of Mr. K. S. Saunders, studies were made of the adsorption of water vapour on manganous oxide. The experiments showed considerable variation depending on a number of factors. This year the study has been continued and as a result conditions are so under control that pure manganous oxide may be obtained in a definitely crystalline form. Mr. W. A. Young and Mr. R. A. Berry have assisted in this work.

4. The Solubility of Manganous Oxide.

After considerable difficulty apparatus has been constructed which will give the necessary precision required in studies of this kind. The measurements should be completed soon. If they are precise enough, it will be possible to calculate the free energy of a manganous ion. Mr. A. K. Edwards assisted in this work.

Dr. J. A. Gray has completed the analysis of the γ-rays of radium D and radium E, work which had its inception many years ago. Preliminary accounts of the results have been published. It has been found that radium D emits one primary γ-ray per disintegrating atom, 96% of these being internally absorbed. Radium E, on the other hand emits no primary γ-rays, i.e. rays from the nucleus, but 1.5% of the disintegrating atoms emit a γ-ray, which varies in energy from a few thousand to a million votes.

Mr. H. H. Penley has completed studies on the structure of fine carbon blacks and we can say with some degree of certainty that they consist of particles of order of 25Å in diameter and also that these particles combine with one another in such a way as to form large particles of the order of 1000Å in diameter. The elementary particles are graphite.

Mr. A. G. Ward continued his work on the scattering of β-rays at large angles. The main result obtained was the definite proof that some β-rays are scattered without loss of energy. Mr. Ward is now studying at Cambridge University, having been deservedly awarded an Exhibition of 1851 Research Scholarship and an Emmanuel College Research Fellowship.

Mr. H. LeCaine worked with Dr. Gray during the past summer and part of the present session and has done valuable work on the experimental side. He has constructed a device for the automatic regulation of the current in a Shearer X-ray tube. A paper explaining this device has been written and has been accepted for publication.

The interest in the Baconian Society, a group composed mainly of men interested in research, augurs well for the future. A number of recommendations have been made by this Society and these have been carefully considered by our Committee.

We have taken for granted that the prosecution of research should not interfere with undergraduate teaching. It is our belief that it has not done so, but has rather stimulated such teaching.

For their own reputation and that of the University, those members of staff capable of doing independent and worthwhile research should have the opportunity of doing so, without being too heavily handicapped. For the most part, these men are so burdened by heavy teaching duties during the session that they have neither sufficient time nor energy for much continuous work, and continuity of work is necessary. It is true that a student assistant may help a man during the summer months, and we cannot assess too highly the importance of this, for the student as well as the member of staff. Quite often the student continues and obtains a higher degree, but usually spends just a year in doing this. In many cases, however, he does not get far enough to be of any great assistance to the supervising professor, because he has to spend so much time in acquiring the necessary technique.

It is difficult to formulate a uniform plan for all departments. The situation varies so much from one department to another that we feel that questions of policy such as this would be, should be approached by the department concerned. Departments, and individuals as well, should be aided when they obtain results which justify the expenditure of money. At the same time, the Committee feels that unless some work is done under difficult conditions, not much will be done under the best of conditions.

Where help is justified, it might be given in two ways (a) by assistants of the laboratory boy type, who would be employed entirely in doing routine work of a simple kind, (b) by laboratory technicians, men of some maturity and training in the special field in which help is required. A man of this type can do a great deal of the routine of a more difficult kind and relieve a teacher of a large amount of time-consuming but necessary work.

Another thing that would be invaluable is the provision of graduate scholarships of a special kind. Such a scholarship would be held for a period of two years, any man holding one giving part of his time in assisting in the department concerned, the rest of his time being devoted to research. This would give continuity to the research, at the same time enabling the scholar to get a broader outlook before he leaves here.

A matter of very great urgency is the installation of a precision lathe in the workshop. The one in use is old and of an obsolete type. There is only one man in the shop to do all the work and, in consequence, it is being held up. Furthermore, other work which would be put into operation, is not even brought to Mr. Bradfield's attention. A precision lathe would cut down the average time of doing a piece of work by at least one-third.

We wish once more to express our appreciation to Mr. Bradfield for his invaluable services.

A. L .CLARK, Chairman.
J. A. GRAY, Secretary.

REPORT OF THE UNIVERSITY ART COMMITTEE

Under the direction, for a second year, of Mr. André Biéler as resident artist, the promotion of active interest in art in the university and the community has continued to be made possible by the generosity of Mrs. Frederick Etherington.

The half courses which Mr. Biéler has given for credit in the Faculty of Arts last year and this year are to be combined in a single whole course for 1938-39. This work will continue to be a combination of lectures and studio practice, supplemented by reading. The success of the combination has vindicated the policy of inaugurating this work under a man whose knowledge and appreciation of art have as their foundation and background his own varied and professional practice of art. Under Mr. Biéler's impelling guidance there is no danger of art being merely another subject to be studied for the sake of a credit; it is bound to be recognized as a universal aspect of human activity, to be appreciated through participation as well as observation.

Mr. Biéler's lectures to students taking the course have also been open to other students and to members of the Kingston Art Association. Besides the 29 students regularly enrolled there has been a gratifying attendance from these other groups.

Studio classes for children, for boys and girls of high-school age, and for adults, have also been continued in co-operation with the Kingston Art Association. Enrolment in these three classes has been respectively 58, 14, and 20, and interest and attendance have been well maintaind. This work continues to be a very important part of the Resident Artist's activity.

Exhibitions have again been under Mr. Biéler's charge. A special exhibition of Contemporary Canadian Painting was collected by him and hung in Grant Hall for the meetings of the Conference on Canadian-American Affairs in June. This was retained also for the Summer School. The following is the list of exhibitions hung in the Senate Room during the regular college year. At the private views for university students and members of the Kingston Art Association, which have been well attended, Mr. Biéler has usually spoken.

Contemporary Canadian Paintings (Picture Loan Society).
Prints by Severini (Art Gallery of Toronto).
Book Illustration and Fine Printing (National Gallery of Canada. Mr. E. C. Kyte spoke at the private view).
Fourth Canadian International Salon of Photographic Art (National Gallery of Canada).
Original Work of Cinema Art Directors (National Gallery of Canada).
Chinese Art (Loaned by private collectors in Kingston and the Sidney Carter Art Galleries, Montreal).
Third Annual Salon of the Queen's Camera Club.
Water-Colours by Goodridge Roberts and Sculpture in Wood by Elford Cox and Mr. Hodgson.
Paintings by the Ontario Society of Artists.
Work of Mr. Biéler's classes.

The Art Association also sponsored an illustrated lecture on "Public Taste and Art in Canada from 1672 to To-day" given by Mr. Graham C. McInnis of *Toronto Saturday Night* in the Studio on March 25th. It joined in sponsoring a university lecture on "Chinese Art" by Dr. C. T. Currelly of the Royal Ontario Museum, given in Convocation Hall on January 13th. With the Kingston Federation of Women Teachers it sponsored a lecture on "The Art of the North American Indian" given by Miss Ruth Home of the Royal Ontario Museum in the Studio on March 25th.

Mr. Biéler gave during the year a number of talks on art in the Queen's University series over Station CFRC, and lectured in neighbouring towns. It is matter for congratulation that he had his own work included in the exhibition of Canadian paintings sent to London for the Coronation and to the

Paris Exposition. He also had a one-man show at Hart House and at the Mellors Gallery in Toronto, speaking at Hart House on the occasion of his exhibition there. Work by members of his children's classes was shown in Ottawa and is included in the exhibition of children's work now touring Canada under the auspices of the National Gallery.

In the Summer School of 1938 Mr. Biéler will conduct a course in art, as he did last summer, combining practice and lectures as in the winter session.

REGINALD G. TROTTER,
Chairman, University Art Committee.

REPORT OF THE RESIDENT MUSICIAN

During the past year the furnishing and decorating of the Music Room have been completed through the generosity of Mrs. Frederick Etherington. Mrs. Etherington's gifts to the room have included a new Steinway grand piano in a special natural oak finish to match the furnishing of the room.

The room has been open for an hour and a half daily, and has been used by an average of seventeen students per day. It has also been opened for the broadcasts by the Metropolitan Opera Company on Saturday afternoons and of the New York Philharmonic Symphony Orchestra on Sunday afternoons.

The lectures in the History of Music course are held in the room, and its facilities have also been made use of by the English Club, the German Club, and the Kingston Centre of the Canadian College of Organists.

The students Glee Club was revived this session and had a successful year. The group has sung on two occasions over the University broadcasting station, and formed the choir for the University services during the session.

A group of third year medical students formed a male chorus which met weekly during the second half of the session. They expect to continue as a group next session.

The resident musician conducted a concert by the Kingston Choral Society and orchestra in Grant Hall on February 28th. The society gave the St. John Passion of Bach complete on April 8th in St. George's Cathedral, Kingston, with soloists from Ottawa and Toronto.

The Hammond electronic organ presented by Mrs. D. W. Boucher for Grant Hall has been found valuable for use at the

University services, and was also used at the Choral Society's concert in February.

A series of twelve Beethoven piano sonatas in five recitals was given by the resident musician in the music room in February and March and was well attended.

F. LLEW. HARRISON,
Resident Musician.

REPORT ON PHYSICAL TRAINING

Owing to illness the physical director has been unable to do his customary work in the department. Mr. Bradshaw of the local Y.M.C.A. staff has courageously carried on an abbreviated schedule at Queen's as well as his own work, and even with a greatly curtailed programme was able to offer ample opportunity to all freshmen to comply with attendance requirements, and also to provide exercise periods for other than first year men.

Marching, setting up exercises, exercises requiring coordination and skill, and the free use of competitive games and relays made those exercise periods healthful and interesting.

The classes have been well attended, and as a wide option is given to those desiring to enter the more specialized sports, the ranks of boxing, wrestling and swimming have been materially increased and much enthusiasm created in these circles.

Very keen competition marked the Intercollegiate Boxing, Wrestling and Fencing Tournament at Queen's this year. Our team did not do as well as in previous years, largely due to inexperienced athletes entering competition for the first time.

Swimming has advanced rapidly in general favor, and many freshmen were taught the art, whilst others under the careful supervision of the instructors developed marked speed-swimming ability.

Basketball enjoyed its usual popularity, but our teams have not been as strong as formerly, due to loss by graduation of players who make up combinations strong enough to win championships.

A very fine spirit of sportsmanship has been maintained by all teams, even in defeat, and this feature is worthy of note as it is the true measure of the genuine athlete.

A detailed report of attendance covering this year's work will be forwarded to the Registrar's department so that credit may be given first year students.

JAMES G. BEWS,
Director of Physical Training.

REPORT ON WOMEN'S CLASSES IN PHYSICAL TRAINING

The season 1938-39 opened with softball practices and the inter-year games were played off by the end of October. Tennis was played at the same time, and, from a tournament among ourselves, players were chosen for the inter-collegiate games at McGill University when Queen's won the series on points.

A telegraphic archery meet was again held but was not completed in Kingston owing to unsuitable weather.

The inter-year matches in basketball were played off before Christmas and work for the inter-collegiate team began soon after. The meet was held at Queen's this year and our students took third place.

Ice hockey was played by a small but enthusiastic group of students.

Badminton has, as usual, attracted quite a large number of students. A tournament for doubles and singles was played and a team chosen to go to London for the inter-collegiate meet. McMaster University won the greatest number of points, Queen's coming fourth.

The Bronze Medal for Life Saving was won by some thirty students. Levana held one swimming meet among themselves and two with the K.C.V.I., of which they lost the first and won the second. At the inter-collegiate swimming meet, held in Toronto, Queen's took third place.

The compulsory physical training periods were continued in-doors in November. Besides Danish gymnastics an effort was made to teach all beginners to swim, also to give a groundwork for various sports to be played in after years at the University and elsewhere.

ETHELWYNNE MURPHY.
Physical Director for Women.

REPORT OF THE MEDICAL ADVISER

The usual physical examination of all students attending the University for the first time was carried out at the commencement of the session. Of the 523 students examined, some 8 were permanently exempted from compulsory Physical Training, while in some 16 other cases, various recommendations were made.

The medical officer has been assisted in his task this year by Dr. J. T. Tweddell, whose services he has found invaluable. He also wishes to acknowledge the very fine cooperation afforded him by the various departments of the Kingston General Hospital, where the medical office is located. Dr. E. P. White, the senior resident, has also rendered valued assistance.

The student office has been well patronized this year—by approximately 944 of a total of 1800 registered students. The total number of office consultations, 2128, is not excessive, and the amount of really serious illness has been small. Four hundred and sixty-eight students were sick enough to require admission to hospital, for a total stay of 1764 days (average stay, 3.8 days). As usual, respiratory tract infections make up the very large majority of cases treated. This year, a number of moderately severe cases of pneumonia have been seen, but all have done exceptionally well. There has been remarkably little infectious disease—only 3 cases of chickenpox and 1 of mumps.

This year, the number of surgical operations required to be performed on students by various members of the surgical staff is about average—29. Of these more or less emergent operations, 16 could be classed as major procedures, and included 14 appendicetomies. The results obtained were all satisfactory, and again it is a pleasure to report a session with no fatalities.

For the past three sessions, now, the medical officer has been receiving exceptionally valuable assistance from Dr. A. M. Doyle, of the Ontario Hospital Service, who has seen, in his Mental Health Clinic, increasing numbers of students who are experiencing more or less serious difficulties of a nervous character in connection with their university work. I cannot speak too highly of the work that Dr. Doyle has been able to do in some of these cases. Unfortunately pressure of other work has prevented his seeing all students who might have been helped by his advice, and the time which it has been possible to spend with some of our more difficult cases has been admittedly inadeqaute. I would certainly like to see things so arranged that greater use could be made of Dr. Doyle's invaluable services in this increasingly important field of psychological medicine in the future.

W. FORD CONNELL, M.D.,
University Medical Officer.

REPORT OF THE QUEEN'S UNIVERSITY CONTINGENT CANADIAN OFFICERS' TRAINING CORPS

1. During the past Annual Training, Capt. W. R. Sawyer, of R.M.C. civil staff, has been in command of the Science Company, much to the advantage of that Company and the Corps.

2. The Corps will suffer a distinct loss next season, because Major Melvin will be absent for the entire session.

3. Major Earl will succeed to the command of the Corps, and this will leave both Arts and Medical Companies without a member of staff in command of them. A further effort should be made by the Military Committee of the University to find members of staff to take over from those who must retire.

4. Parades totalling 54 hours have been held during the past season on Wednesday evenings and on Saturday afternoons. The Arts Company carried out extensive training in the use of light automatic weapons, and its improvement was most noticeable. The Medical Company trained a squad in anti-gas measures which gave demonstrations to the remainder of the Corps and to some civilian organizations. The Engineer Company trained men in artillery, field engineering and signals. The work as a whole was an improvement on that of the previous year.

5. The following War Office certificates were obtained:

Artillery	A	7		
Engineer	A	1	B	2
Signals	A	3		
Infantry	A	2	B	1
Medical	A	6	B	5
Totals	A	19	B	8

There were 31 candidates for A Certificates and 13 for B Certificates in March, 1938. The results will not be known until about the end of May.

6. The authorized establishment is 231 all ranks. The enrollment was 195, of whom 106 were in the Corps for the first time.

7. Dr. George Hayunga, of New York City, an old graduate of Queen's, presented to the Corps on Feb. 23, on behalf of the John Hayunga Post, No. 1094, the American Legion, King's Colours and Regimental Colours. This very handsome gift is greatly appreciated not only for its own sake but as a timely demonstration of the strong bonds of friendship between the United States and the British Commonwealth of Nations.

8. The District Officer Commanding M.D. No. 3 and his staff have given the Corps the greatest help in every phase of its training. The Athletic Board of Control has very generously given the Corps the use of the Gymnasium floors on Wednesday evenings.

9. Lastly, and by no means least, it should be recognized that any success the Corps has achieved has been due to the ability, tact, enthusiasm and co-operation of the Senior Officers who are members of the University staff. Their example has spread through the junior student officers and non-commissioned officers to the whole Corps. All have worked together for the good of the Regiment and of Canada.

D. M. JEMMETT, LT.-COL.,
O.C., Q.U.C., C.O.T.C.

REPORT OF THE ATHLETIC BOARD OF CONTROL

This year the Senior Rugby Championship of the Intercollegiate Union returned to Queen's after a series as exciting as any in the history of Intercollegiate football. The team upheld the sportsmanlike traditions of former Queen's teams and exhibited rare stamina and courage by winning with a thrilling finish after a poor start.

Playing in the second season of the International Intercollegiate Hockey League, we are glad to report that our hockey team has had a very successful season. Finishing as they did second only to the strong McGill team, our record reads: games won, 11; games lost, 3; games tied, 1.

The very cordial relationships established with the American universities last season were strengthened this season, and the very best of feeling prevailed among the players of all the clubs. Interest in this league is so strong among the student body that accommodation at the Jock Harty Arena has been taxed to the limit at each home game.

The Track and Field Team made a very much improved showing at the Senior Intercollegiate Meet. Mr. J. Courtright scored an Intercollegiate record in the javelin throw. Courtright afterwards went as a member of the Canadian team to the British Empire Games at Sydney, Australia, and won the Empire championship in the javelin throw.

Intercollegiate competition in basketball, boxing, wrestling and fencing, tennis and water polo have been carried on, while Intermediate and Junior teams have competed in outside leagues in football, hockey and basketball.

Intramural sports continue to provide interesting exercise for an increasing number of students, and the many facilities of the Gymnasium are in constant use during the University session.

T. A. McGINNIS,
Chairman Athletic Board of Control.

REPORT OF THE SCHOOL OF NAVIGATION

The twenty-fifth session of the Navigation School, just closed, has been a very successful one. There were 22 men in attendance of which number 12 passed the Dominion Government examinations for certificates of various grades. The attendance of these men has been most satisfactory, some of them having perfect records. This fact shows the keen interest they take in the work and their appreciation of the opportunity to obtain the instruction so necessary for passing the examinations.

Since a man must serve 36 months afloat before he can come up for examination and since about 7½ months per year is the maximum time possible, it takes about five years to reach the examination stage. A number of men who have not completed the required time afloat attend the school in order that they may become more familiar with the theoretical side of navigation and make the actual preparation for the examination less arduous. On the other hand there are a number of men fully qualified as to time of service, but who do not attempt the examinations. It is felt generally that the requirements are becoming somewhat higher than is advisable since these experienced and very practical men cannot pass the required examination. A man over thirty years of age who has not attended school for fifteen or more years finds it exceedingly difficult to settle down to study. The younger man with insufficient time afloat, however, should be encouraged to attend the School whenever possible.

The new Dominion examiner has conducted the examinations with utmost fairness and impartiality. He has shown a keen understanding of the conditions under which the candidates work and has been most sympathetic. The annual eyesight and hearing tests for pilots of this district was held on March 16th when between 50 and 60 men were examined. This examination was in charge of the Director and Superintendent of Pilots, both Dominion Government officials.

The numbers passing the various grades of examinations are as follows:

Master Home Trade	1
Master Inland Waters	2
Master Inland Tug Boat	1
Mate Home Trade	5
Mate Inland Waters	2
Mate Minor Waters	1

The increasing weight of work required for the examinations makes it almost impossible to take time for preparation for the University Diploma, so none were awarded this year.

The following table is interesting:

Total number of students who attended the school in 21 years	566
“ “ “ “ “ secured Government certificates	303
“ “ “ “ “ received the Queen’s Diploma	68

Records were not kept for the earlier years.

Captain A. Barrett who has been in charge of the instruction since 1918 served all through the winter and helped the men prepare for the certificates as outlined above.

A. L. CLARK.

REPORT OF THE ALMA MATER SOCIETY

During the past year, student government at Queen's functioned smoothly.

The Meds-Science candidates made a clean sweep of the annual elections, giving their party a majority on the executive. Despite the disparity in representation, there was comparatively little party politics evident in the executive meetings. True, there were occasional sharp differences of opinion, but those made for a keener appreciation of campus problems and, on the whole, reacted to the benefit of the Society.

The most contentious matter the executive was called upon to legislate was the question of freshmen regulations in general, and pyjama parades in particular. One parade was permitted and unfortunately ended in a disastrous raid on Ban Righ Hall. The guilty parties were subsequently fined at a sitting of the A.M.S. Court. Further parades were banned when no one would take the responsibility of organizing them.

The highlight of the second term was the Rectorial Day ceremonies on January 12 when Hon. Norman McL. Rogers visited Queen's in his capacity as Rector. After his splendid address in Grant Hall, the Rector was presented with a key and later entertained at luncheon in the Students' Union.

Thanks to the efforts of Mr. C. G. Bruce and his committee, the executive was able to establish and formally adopt an official blazer for the University. Other constructive measures included plans for the improvement of the Queen's band and for more rigid control of social functions on the campus. The results of the work in these directions will be more apparent next year.

The excellent co-operation afforded by those members of the staff who were consulted on matters of policy and for other assistance was no small factor in the successful promotion of various undergraduate projects.

K. W. CAMPBELL,
President, Alma Mater Society.

REPORT OF THE GENERAL ALUMNI ASSOCIATION

At present Queen's has 8448 living graduates, approximately 340 holders of Theological and Engineering diplomas, and a large number of other ex-students. During the past year the General Alumni Association, through the work of its main office and the activities of its numerous branches, has continuously endeavoured to promote the welfare of the University by maintaining interest and enthusiasm among these alumni and contact between them and their Alma Mater.

Alumni Statistics.

The numbers of graduates in the various categories are: Arts (including Commerce), 5399; Medicine, 1672; Science, 1663; Theology, 102; Honorary, 170. Of these graduates, 558 hold degrees in more than one faculty.

The graduates living in Canada number 6784 and are distributed as follows: Prince Edward Island, 4; Nova Scotia, 55; New Brunswick, 55; Quebec, 543; Ontario, 5206; Manitoba, 124; Saskatchewan, 285; Alberta, 210; British Columbia, 296; North West Territories, 5; Yukon, 3. There are 933 graduates in the United States and 234 in other countries. To this distribution may be added, probably in about the same proportion, the 495 graduates whose present addresses are missing.

The number of deceased graduates is 1976.

Association Branches.

There are at present 33 branches of the Association in Canada and the United States—an increase of 2 over the 1937 total — and further alumni groups are now in process of organization. During the year 69 branch meetings were held, at many of which the Principal or other members of the University staff were present as guest speakers. The branches have continued to render valuable service in the general and specific work of the Association.

Association Membership.

At the close of the 1936-37 year the membership of the Association was 1583 — an increase of 9 per cent over that of the previous period. The membership at present is 9 per cent greater than at the corresponding date last year.

The "Queen's Review."

The *Queen's Review* was published monthly throughout the year, with the exception of June, July and September. It carried numerous special articles of alumni interest, a month-by-month summary of University and student news, reports of the activities of the branches, personal notes about 1523 alumni, and various other material. The *Review* is one of the most important activities of the Association.

The net cost of the *Review* for the year was $373.95. The circulation was maintained at 5000.

Annual Meeting and Reunion.

The annual meeting of the Association and the eleventh annual reunion were held during the week-end of October 16 —that of Autumn Convocation and the Western-at-Queen's football game. In this alumni "homecoming" 29 classes were represented out of the 37 scheduled to return under the Dix Reunion Plan. The University reception; Autumn Convocation, with its address by Sir Edward Beatty; the annual meeting of the Association, including the inspiring address by Mr. J. M. Macdonnell; the various class functions; the football game; and other events — all combined to make the week-end a most enjoyable one.

Two meetings of the Board of Directors and such meetings of the Advisory Committee of the Association as were necessary were also held.

Social Functions.

The Association sponsored six alumni-student dances at the University during the year — two after the Reunion game, two after the Toronto game, one after the McGill game, and one on the evening of the Spring Convocation. All of these functions were successful, and were commended by the University authorities as filling a definite need at the times they took place. Numerous social affairs were also held at the branches.

The Grant Hall Fund.

The $14,000 debt of the Association for the renovation of Grant Hall was entirely paid off during the year; and by March 31, 1938, $649.38 had been collected towards a subsequent commitment of $1500 for the installation of a public-address system.

Grant Hall has come to be regarded as the "Alumni Building" at Queen's, and the Directors of the Association therefore feel a certain responsibility for its maintenance and further improvement. Hence the assumption of the cost of the public-address equipment.

Further gifts to Grant Hall with which the Alumni office has been associated directly or indirectly during the year have been a Chancellor's chair, presented by the class of Arts '14; an electric organ presented by Mrs. D. W. Boucher (Miss Thelma Bogart), Arts '27, in memory of her mother; and a Rector's chair, to be presented at Spring Convocation by the class of Arts '38. The Association is contributing $33 towards the $120 cost of the Rector's chair.

The Employment Service.

By the close of the present session the Employment Service, which is administered by the secretary-treasurer of the Alumni Association under the direction of the Engineering Society, will have been instrumental in securing permanent or temporary employment for approximately 360 graduates and students. The placements are as follows: Mining, Metallurgy and Geology, 189; Chemistry and Chemical Engineering, 18; Mechanical Engineering, 22; Electrical Engineering, 20; Civil Engineering, 7; Commerce, 40; Arts (men and women), 42; Medicine, 16; Miscellaneous, 6. The Service has maintained contact with approximately 2000 Canadian firms and organizations.

Employment conditions throughout Canada, so far as men and women with university training were concerned, were very bright during 1937. Since the beginning of 1938, however, the situation has altered considerably, and the Service's placement record for the 1937-38 period is consequently slightly lower than that for last year.

The relative demand for graduates and students in the various faculties or faculty divisions varies greatly from year to year. It is therefore difficult for the Service to make prophecies as to the future, or to advise students regarding choice of course on the basis of employment possibilities after graduation. It does appear, though, that too many young men are going into the Mining, Metallurgy and Geology sections of Engineering at present. The demand for men from these divisions is still high by comparison with some of the other sections, but there is strong likelihood that the supply is going to exceed the demand in the near future.

University Publicity.

During the year 360 items of news concerning Queen's were released to the press of Canada by Mr. H. J. Hamilton, of the Alumni Association staff, who is in charge of this division of the University's publicity work.

University Endowment.

Further progress has been made by the Permanent Endowment Committee, of which the secretary-treasurer of the

Association is secretary, in the preparation of a brief concerning the University's endowment needs, in giving consideration to possible benefactors, and in making provisional arrangements for a special campaign prior to the University's centenary.

University Centenary.

The Association is co-operating with the University administration, through membership on a special committee, in the preliminary preparations for a fitting celebration of the centenary of Queen's in 1941.

GORDON J. SMITH,
Secretary-Treasurer.

REPORT OF THE QUEEN'S UNIVERSITY ALUMNAE ASSOCIATION

The Queen's University Alumnae Association has nine organized branches—Toronto, Kingston, Vancouver, Ottawa, Smith's Falls, London, Windsor, Montreal and Hamilton. Membership in the general association is about 250.

Affiliation is maintained with the National Council of Women and the Canadian Federation of University Women, and regular contributions to the scholarship fund of the latter society are made.

The Marty Memorial Scholarship has been awarded to the second recipient, Miss Jeanne S. Le Caine, Arts '37. Although the Scholarship is normally awarded for a year's postgraduate study overseas, Miss Le Caine will be permitted, in the special circumstances of her work, to hold it at an American University. This fund has now passed the Twenty-five Thousand Dollar mark.

The major project was the work of the Building Committee on the addition to Ban Righ Hall. This Committee obtained plans for a building with dining accommodation for approximately 300 girls, and sleeping accommodation for as many as possible, with the necessary sitting rooms, committee rooms and other facilities for student life. Four meetings were held to consider the plans submitted by Mr. Colin Drever, architect, Kingston.

ANNE SMITH,
Secretary.

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REGISTRAR'S REPORT

Degrees granted May, 1937, and October, 1937

		Men	Women	Total	Total
HONORARY DEGREES:					
Degree of Doctor of Laws (LL.D.)		9			
Degree of Doctor of Divinity (D.D.)		2			
					11
DEGREES BY EXAMINATION:					
Degree of Bachelor of Divinity (B.D.)		4			
					4
Faculty of Arts:					
Degree of Master of Arts (M.A.)		12	3	15	
Degree of Master of Commerce (M.Com.)		1		1	
Degree of Bachelor of Arts with Honours (B.A.)		27	23	50	
Degree of Bachelor of Arts (Pass) (B.A.)		79	57	136	
Degree of Bachelor of Commerce (B.Com.)		18	2	20	
		137	85		222
Faculty of Applied Science:					
Degree of Master of Science (M.Sc.)					
Chemistry	2				
Physics	1				
		3			
Degree of Bachelor of Science with Honours (B.Sc.)					
Mining Engineering	2				
Chemistry	1				
Chemical Engineering	2				
Metallurgical Engineering	2				
Civil Engineering	2				
Mechanical Engineering	4				
Electrical Engineering	3				
		16			
Degree of Bachelor of Science (Pass) (B.Sc.)					
Mining Engineering	25				
Chemistry	3				
Mineralogy and Geology	2				
Chemical Engineering	8				
Metallurgical Engineering	5				
Civil Engineering	3				
Mechanical Engineering	15				
Electrical Engineering	10				
		71			90
Faculty of Medicine:					
Degrees of Doctor of Medicine and Master of Surgery (M.D., C.M.)		46			
					46
					373

REGISTRATION

The registration for 1937-38 compared with the previous session is as follows:

DEGREE COURSES

	1936-37		1937-38	
Faculty of Arts:				
Intramural—First registration	271		298	
Previously registered	576		592	
		847		890
Summer School	750		510	
Less non-degree course students	26		17	
		724		493
Extramural—Summer	1213		1055	
Less also in Summer School	705		471	
		508		584
Winter	1630		1468	
Less registered also in Summer	841		650	
		789		818
Faculty of Applied Science:				
First registration (plus 3 special students) 1937-38	206		183	
Previously registered	353		435	
		559		618
Faculty of Medicine:				
First registration	44		44	
Previously registered	250		248	
		294		292
		3721		3695
Less registered in two Faculties		6		4
		3715		3691

NON-DEGREE COURSES

Intramural—Art, Drama and Music—Summer School (in addition to regular members of the Summer School)	26		17	
Extramural—Middle and Upper School	31		19	
Banking—Fellows' Course	477		469	
Banking—Supplementary Course	15		26	
Chartered Accountants' Course	430		454	
		979		985
Total registration		4694		4676

ANALYSIS OF REGISTRATION BY FACULTIES

Faculty of Arts:

	Men	Women	Total	Total
Intramural—First Year	189	109	298	
Other Years	357	235	592	
				890
Extramural—including Summer School	924	988	1912	
Middle and Upper School	7	12	19	
				1931

Faculty of Applied Science:

First Year	181	
Second Year	191	
Third Year	121	
Fourth Year	111	
Graduate Students	8	
Special Students (First Year)	2	
Special Students (Second Year)	1	
Special Students (Graduate Work)	3	
		618

Registration by Departments:	Third Year	Fourth Year
Mining Engineering	47	34
Chemistry	2	7
Mineralogy and Geology	5	2
Chemical Engineering	19	14
Metallurgical Engineering	12	12
Civil Engineering	4	8
Mechanical Engineering	16	21
Electrical Engineering	14	10
Physics	2	3

Faculty of Medicine:

First Year	44	
Second Year	48	
Third Year	44	
Fourth Year	56	
Fifth Year	48	
Sixth Year	52	
		292

Banking:

Fellows' Course	469	
Supplementary Course	26	
		495
Chartered Accountants' Course	454	
		454
		4680
Less registered in two Faculties		4
		4676

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

Geographical Distribution 1937-38	Faculty of Arts Intra-mural	Faculty of Arts Extra-mural	Faculty of Applied Science	Faculty of Medicine	Banking	Accounting	Total
Ontario	719	1620	488	233	190	373	3623
Quebec	66	157	44	5	75	...	347
New Brunswick	11	5	5	8	20	13	62
Nova Scotia	5	4	4	5	27	17	62
Prince Edward Island	3	3	1	5	1	...	13
Manitoba	17	10	16	2	37	...	82
Saskatchewan	24	40	28	8	46	5	151
Alberta	10	48	13	5	39	39	154
British Columbia	5	29	8	4	42	4	92
Yukon	...	1	...	...	2	...	3
United States	25	9	4	12	4	...	54
Newfoundland	..	4	2	3	2	3	14
England	...	...	2	...	1	...	3
Scotland	...	...	1	...	...	...	1
Ireland	1	...	...	...	...	...	1
Germany	1	...	..	...	...	...	1
British West Indies	...	...	1	1	...	...	2
British Honduras	...	...	...	...	2	...	2
British Guiana	...	1	...	...	2	...	3
Puerto Rico	...	...	...	1	1	...	2
South America	2	...	...	...	...	...	2
French West Indies	...	...	...	...	1	...	1
Cuba	...	...	...	...	1	...	1
St. Pierre et Miquelon	...	...	...	...	1	...	1
Trinidad	...	...	...	...	1	...	1
Greece	...	...	1	...	...	...	1
Japan	1	...	...	...	...	...	1
	890	1931	618	292	495	454	4680
Less registered in two Faculties							4
Grand Total							4676

DISTRIBUTION OF STUDENTS IN ONTARIO

Distribution of Students in Ontario by Districts	Faculty of Arts Intra-mural	Faculty of Arts Extra-mural	Faculty of Applied Science	Faculty of Medicine	Banking	Accounting	Total
Eastern Ontario:							
Prescott	5	13	1	...	...	...	19
Glengarry	6	29	1	2	1	...	39
Stormont	10	36	9	1	2	...	58
Russell	5	12	...	2	...	...	19
Carleton	128	160	78	27	22	30	445
Dundas	17	30	3	5	...	...	55
Grenville	5	15	5	3	...	...	28
Lanark	14	60	5	11	1	...	91
Leeds	32	46	10	15	2	...	105
Renfrew	20	44	13	10	4	...	91
Frontenac	165	84	28	43	2	2	324

Distribution of Students in Ontario by Districts	Faculty of Arts		Faculty of Applied Science	Faculty of Medicine	Banking	Accounting	Total
	Intra-mural	Extra-mural					
Prince Edward	2	24	...	2	...	...	28
Hastings	27	85	18	11	1	1	143
Lennox and Addington	7	31	4	2	2	...	46
Central Ontario:							
Haliburton	...	3	...	...	...	...	3
Peterborough	11	58	8	7	1	2	87
Northumberland	6	35	3	3	...	...	47
Durham	2	33	1	2	1	...	39
Victoria	6	37	4	...	1	...	48
Ontario	10	42	5	1	2	...	60
Muskoka	...	14	4	2	1	...	21
Simcoe	7	39	4	6	3	...	59
York	60	92	28	8	61	280	529
Halton	2	8	6	3	...	2	21
Wentworth	10	14	38	12	8	12	94
Welland	18	46	16	7	5	1	93
Lincoln	13	21	8	3	2	1	48
Peel	2	8	...	1	5	2	18
Dufferin	...	7	...	...	...	...	7
Western Ontario:							
Grey	1	33	8	2	3	...	47
Bruce	7	13	2	...	2	...	24
Huron	...	7	5	...	2	...	14
Middlesex	6	6	8	...	6	5	31
Lambton	3	2	14	1	4	...	24
Kent	3	6	10	6	1	1	27
Essex	7	28	9	3	9	5	61
Elgin	4	5	11	1	4	...	25
Norfolk	2	8	2	2	3	...	17
Oxford	4	17	1	...	7	...	29
Brant	4	7	14	1	3	7	36
Waterloo	5	16	4	...	3	6	34
Perth	3	13	6	2	2	...	26
Haldimand	1	3	3	2	1	...	10
Wellington	6	24	6	1	3	...	40
Northern Ontario:							
Parry Sound	6	26	3	1	1	...	37
Nipissing	9	19	3	1	1	1	34
Timiskaming	13	32	21	3	2	1	72
Algoma	9	45	11	5	1	...	71
Kenora	2	18	1	...	...	...	21
Rainy River	1	22	3	...	...	1	27
Sudbury	8	23	15	...	2	4	52
Thunder Bay	18	87	20	7	2	6	140
Cochrane	7	34	8	6	1	3	59
	719	1620	488	233	190	373	3623

JEAN I. ROYCE,
Registrar.

TREASURER'S REPORT

REVENUE AND EXPENDITURE

For the Year ending March 31st, 1938

REVENUE

Income from Students			$385,112.66
Chartered Accountants			20,451.00
Income from Investments less expenses of collection, mortgages	$ 14,485.67		
Bonds and other investments	139,691.13		
		$154,176.80	
Less Interest credited to various trust funds		27,680.91	
			126,495.89
Income from Craine Endowment used for Biochemistry			6,000.00
Income from rentals — net			2,352.11
Income from broadcasting			434.25
Grants—			
Ontario Government — General		275,000.00	
Public Health		5,000.00	
Dominion Government — School of Navigation and Observatory including arrears of $500		1,500.00	
Meteorological Services		600.00	
			282,100.00
Sundry — Heating Plant		4,670.85	
Various		371.18	
			5,042.03
			$827,987.94

EXPENDITURE

Educational:			
Salaries		$423,719.12	
Presiding Examiners		5,885.83	
Supplies		47,142.12	
			$476,747.07
Administrative expenses — Salaries and Supplies			73,044.67
Library — Salaries		18,474.32	
Supplies		12,700.00	
			31,174.32
Plant:			
Maintenance of Plant, including repairs, taxes, janitors, wages and supplies		56,037.29	
Heat, Light, Power —			
Central Plant	$ 27,094.15		
Current purchased	3,369.56		
Distribution of Heating	3,401.43		
		33,865.14	

Cost of Drafting Building alterations in excess of 1937 provision		2,793.95	
Cost of Sanitary Building in excess of 1937 provision		5,129.24	
Cost of Biochemistry Building in excess of amount received from Craine Foundation		20,507.73	
Provision for repairs to Carruthers Hall		25,000.00	
Provision for new equipment		15,200.00	
Provision for extension of Radio Plant		15,000.00	
			173,533.35
Sundry:			
Meteorological Service		600.00	
Public Health		5,000.00	
Queen's Quarterly		1,264.82	
Travelling		3,327.39	
Annuities	13,431.85		
Less interest on securities	4,125.00		
		9,306.85	
Pensions		6,800.00	
Loss on Mortgages		6,261.49	
Conference on Canadian-American Affairs		1,445.50	
Provision for expenses re History of the University		6,000.00	
Provision for Pensions		25,000.00	
Advertising		1,720.18	
Engineering Society Employment Service		1,000.00	
Miscellaneous		4,949.93	
			72,676.16
			$827,175.57
Excess of Revenue over Expenditure			812.37
			$827,987.94

BALANCE SHEET — MARCH 31st, 1938

ASSETS

Investments:		
Bonds, Debentures and Stocks at book value	$ 3,009,538.79	
Mortgages, Current and Foreclosed	384,217.43	
		$ 3,393,756.22
Craine Foundation Investments	254,814.57	
Craine Foundation Cash awaiting investment	17,117.05	
		271,931.62
Land, Buildings and Equipment at appraisal value		4,625,634.16
Craine Building		125,000.00
Gymnasium		136,052.49
Cash on hand and in bank		66,964.20
Sundry assets, accounts receivable, fuel, etc.		20,116.51
Deferred expense — Departmental overdrafts		2,700.88
		$ 8,642,156.08

LIABILITIES AND ENDOWMENTS

General Endowment	$ 2,276,981.64	
1926 Campaign	734,022.14	
Dr. Agnes Douglas Craine Foundation	396,931.62	
		$ 3,407,935.40
Scholarships:		
Capital	419,035.72	
Interest at credit	14,900.23	
		433,935.95
Trust Funds		232,729.46
Pension Reserve		25,000.00
Loan Funds		3,345.89
Current Liabilities		50,362.08
Reserves for Commitments		119,776.23
Reserve for Depreciation of Buildings and Equipment		146,332.25
Reserve for Contingent Loss on Securities		151,519.57
		$ 4,570,936.83
Surplus of Assets over Liabilities		4,071,219.25
		$ 8,642,156.08

SURPLUS

Surplus — Balance March 31, 1937	$ 4,050,406.88
Reserve for Bankers' Fees set up in 1921 now no longer required	20,000.00
Surplus for year ending March 31, 1938	812.37
Balance March 31, 1938	$ 4,071,219.25

AUDIT REPORT

For the Year ending March 31st, 1938

To the Trustees:—

Gentlemen:

We have examined the accounts of the Treasurer of Queen's University for the year ending March 31st, 1938 and certify that the attached Balance Sheet, Operating Accounts, and Schedules are properly drawn up so as correctly to show the financial condition of the University at that date to the best of our knowledge and information.

Expenditures.

We have examined the vouchers for expenditures and report that all disbursements were properly authorized.

Mortgages.

We have inspected the accounts of the mortgagors and have sent out verification notices to all, except in cases where the mortgage had been foreclosed.

Bonds and Stocks.

We have verified the securities by inspection in the vaults of the Bank of Montreal, in the presence of the Principal and Vice-Principal, with the exception of those held by the Bank of Montreal as security, which the Bank has certified to us as being in their possession.

We have ascertained that all interest and dividends which should have been received were properly recorded.

We have inspected the students' ledger and registration cards and have ascertained that all fees have been accounted for.

BURNS & ENGLAND,
Chartered Accountants.

Kingston, Ont.,
May 3rd, 1938.